Run on:

```
BD220247 Method of
BD240916 Polymucle
AX046755 Sequence
AX046753 Sequence
AX046753 Sequence
AX046759 Sequence
AX046759 Sequence
AX046761 Sequence
AX046761 Sequence
AX046761 Sequence
AX046765 Sequence
BD240917 Polymucle
BD240917 Polymucle
BD240917 Polymucle
BD240917 Sequence
BD240917 Bolymucle
AX046757 Sequence
BD240917 Sequence
BD240917 Sequence
BD240920 Polymucle
AX050143 Sequence
BD240920 Polymucle
                                                                                                                                                                                                                                                                                                                                               PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                       DD223232.1 GI:33033002
BD223322.1 GI:33033002
Dahlia merckii (bedding dahlia)
Dahlia merckii
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; campanulids; Asterales; Asteraceae; Asteroideae;
Coreopsideae; Dahlia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANTHONY RAY
PC C12N15/09,A01H1/00,C07K1/12,C12N5/10,C12P21/02//(C12N5/10, PC
                    Polynucle
Method of
Polynucle
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 446)
Broekaert, W.F., Francois, I.B.J.A., Bolle, M.F.C.D., Evans, I.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9826753.7 PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUGUSTINE FRANCOIS,
PI MIGUEL FRANCESCO COLETA DE BOLLE, IAN JEFFREY EVANS, JOHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C12R1:91),
PC C12N15/00,C12N5/00,C12R1:91)
CC Method of genetic expression of polyprotein in plant FH
Location/Qualifiers
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ray, J.A.

Method of genetic expression of polyprotein in plant
Patent. JP 2002523047-A 1 30-JUL-2002;
SYNGBYTA LTD
OS Dahlia merckii
PN JP 2002523047-A/1
PD 30-JUL-2002
PP 17-AUG-1999 JP 2000566429
PR 18-AUG-1999 GB 9818001.1, 04-DEC-1998 GB 9826°
                                                                                                                                                                                                                                                                                                                                          שוו Method of genetic expression of polyprotein in plant.
BD223232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (1) . .(64)
(157) . .(446) .
Location/Qualifiers

    .446
    /organism="Dahlia merckii"
/mol_type="genomic DNA"
/db_xref="taxon:43367"

                                                                                                                                                                                                                                                                                              ALIGNMENTS
                            BD223247
BD240916
AX046755
AX046753
AX046763
AX046763
AX046763
AX046763
AX046765
                                                                                                                                                                                                           A39543
AR050143
AR130262
BD240920
SCDS
                              DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                         BD223232
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BD223256 Method of
BD223246 Method of
BD23234 Method of
BD240936 Polymucle
BD240918 Polymucle
BD23243 Method of
BD23243 Method of
BD23233 Method of
BD23234 Method of
AX046745 Sequence
AX046745 Sequence
AX046745 Sequence
BD22237 Method of
BD22237 Method of
BD22234 Method of
BD23234 Method of
BD23234 Method of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BD223232 Method of
BD240919 Polynucle
                                                                  March 18, 2005, 06:59:55 ; Search time 2319 Seconds
   (without alignments)
   9319.114 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                  1 atggtgaatcggtcggttgc.....ttccaaacgttgaacatccg
                                                                                                                                                                                                           9416466
       GenCore version 5.1.6
(c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                     4708233 segs, 24227607955 residues
                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BD223241
BD223240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BD223248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3D223236
                                                                                                                                                       IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           %
Query
Match Length DB
                                                                                                             US-09-763-019-5
                                                                                                                                                                                                                                                                                                              9b_ba: *
9b_htg: *
9b_om: *
9b_om: *
9b_ox: *
9b_pt: *
9b_pt: *
9b_ro: *
9b_ro: *
9b_ro: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Copyright
                                                                                                                                                                                                                                                                                                     GenEmbl:*
                                                                                                                                                                                                                                                                                                                                              44:
65:
77:
110:
111:
114:
                                                                                                                        Perfect score:
                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM nucleic
                                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                   Sequence:
                                                                                                                                                                                     Searched:
```

Key

Result

Ы

ö

임

윱 ઠ g 8 임 Š g

ò

g

ò

d

ð

ò

```
ATTHONY RAY

PC C12N15/09, A01H1/00, C07K1/12, C12N5/10, C12P21/02//(C12N5/10, PC C12R1:91),

C12R1:91),

CC C12N15/00, C12N5/00, (C12N5/00, C12R1:91)

CC Description of Artificial Sequence: Synthetic sequence FH Location/Qualifiers

Key (76). (597).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                        241 ACCAATGTAAATCATGGGAGGGGGCCCATGGAGCGTGTCATGTGCGTAACGGGAAAC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                             TCAGGITATCAAATCTTTAGTTCATTTATTGAATATGATAGTATTTATATTTTTTATGG 120
                                                                                                                                                                                                                                                                TITIATGIGITCIGACAAGTIGCAAATATIGAGTAGATATCGCATCCGTTAGTGGAGAAC 180
                                                                                                                                                                                                                                                                                      TITIATGTGTTCTGACAAGTTGCAAATATTGAGTAGATATCGCATCGGTTAGTGGAGAAC 180
                                                                                                                                                                                                                                                                                                                                        TATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTGACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                 241 ACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGGAAAC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 ACATGTGTTTCTGTTACTTCAATTGTAAAAAGCCGAAAAGCTTGCTCAAGACAAACTTA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAGCTTGACCGTGATGCCAAGA 420
                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  synthetic construct
synthetic construct
construct
ther sequences; artificial sequences.
1 (Dasses 1 to 606)
Broekaert, W.F., Francois, I.E.J.A., Bolle, M.F.C.D., Evans, I.J. and
                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYNGENTA LID
OS Artificial Sequence
PN JP 200253047-A/5
PD 30-JUL-2002
PF 17-AUG-1999 JP 2000566429
PF 17-AUG-1999 GB 9818001.1,04-DEC-1998 GB 9826753.7 PI
WILLER FRANC BROEKAERT, ISABELLE ELSA JEANNE
AUGUSTINE FRANCOLS,
PI MIGUEL FRANCESCO COLETA DE BOLLE, IAN JEFFREY EVANS, JOHN PI
                                                                                                                                       1 ATGGTGAATCGGTCGGTTGCGTTCTCGCGTTCTTCTGATCCTTTTCGTGCTCGCCATC
                                                                                                                                                                                          TCAGGTTATCAAATCTTTAGTTCATTTATTGAATATGATAGTATTTATATATTTTTTATGG
                                                                                                                                                                                                                                                                                                                                                                181 TATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTGGAA
                                                                              Gaps
                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BD223236 606 bp DNA linear Pl
Method of genetic expression of polyprotein in plant.
BD223236
                                         Length 446;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ray,J.A.
Method of genetic expression of polyprotein in plant
Patent: JP 2002523047-A 5 30-JUL-2002;
                                                                            Indels
                                       100.0%; Score 446; DB 6; I
100.0%; Pred. No. 7.4e-105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="synthetic construct"
                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BD223236.1 GI:33033006
JP 2002523047-A/5.
                                                                            Conservative
                                 Query Match
Best Local Similarity
Matches 446; Consern
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                          61
                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
BD223236
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                              셤
                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                   ઠે
                                                                                                                                                                                                                                                      ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Exeryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; campanulids; Asterales; Asteraceae; Asteroideae; Coreopsideae; Dahlia.

1 (bases 1 to 446)

1 (bases 1 to 46)

1 Sevans, I.J. and Ray, J.A.

1 Sevans, I.J. and Ray, J.A.

1 Surgenta irp 200223052-A 5 30-JUL-2002;

2 Surgenta irp 200223052-A/5

2 Surgenta irp 2002523052-A/5

2 Patient: JP 2002523052-A/5

PP 30-JUL-2002

PP 17-MG-1999 JP 200566448

PP 18-MG-1999 GB 9918003.7

PC C12N15/09, A01H5/00, C07K14/415, C12N5/10/(C12N5/10, C12R1:91), PC C12N15/00, (C12N5/00, C12R1:91)

PC C12N15/00, (C12N5/00, C12R1:91)

PC C12N15/00, (C12N5/00, C12R1:91)

PC Polynucleotide sequences

FF Key Lobs

(15.7)...(446).
                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PAT 17-JUL-2003
                                                                                                                                                                            TATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTGACA 240
                                                                                                                                                                                                                                                                                                                             181 TATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTGACA 240
                                                                                                                                                                                                                                                                                                                                                                                                   241 ACCAATGTAAATCATGGGAGGGTGCGCCCATGGAGCGTGTCATGTGCGTAACGGGAAAC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATGTGTTTCTGTTACTTCAATTGTAAAAAGCCGAAAAGCTTGCTCAAGACAAACTTA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAGCTTGACGGTGATGCCAAGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCAGGTTATCAAATCTTTAGTTCATTTATTGAATATGATAGTATTTATATTCTTTTATGG 120
                                                                                                                                                                                                                             TITTATGIGITCTGACAAGTIGCAAATATIGAGTAGATATCGCATCCGTTAGTGGAGAAC 180
                                                                                                                                                                                                                                                                121 TITIAIGIGITCIGACAAGTIGCAAATATIGAGIAGATAICGCAICCGITAGIGGAGAAC 180
                                                                                                                                                                                                                                                                                                                                                                              ACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGGAAAC 300
                                                                                                 1 ATGGTGAATCGGTCGGTTGCTCCGCGTTCGTTCTGATCCTTTTCGTGCTCGCCATC
                                         Gaps
                                         ö
100.0%; Score 446; DB 6; Length 446; 100.0%; Pred. No. 7.4e-105; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (1) . (64)
(157) . (446) .
Location/Qualifiers
1. . 446

    .446
    /organism="Dahlia merckii"
/mol_type="genomic DNA"
/db_xref="taxon:43367"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ďq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BD240919.1 GI:33050689
JP 2005253052-A/5.
Dahlia merckii (bedding dahlia)
Dahlia merckii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Polynucleotide sequences.
BD240919
                   Best Local Similarity 100.
Matches 446; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BD240919
                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 2
BD240919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
```

184

3

```
275 AGCGTGTCATGTGCGTAACGCGAAACACATGTTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                               245 cgaaaagcrrdcrcaagacaaacrraaagccgaacaacrcgcrcaagacaaacrraargc 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                other sequences, artificial sequences.
1 (bases 1 to 534)
Broekaert,W.F., Francois,I.E.J.A., Bolle,M.F.C.D., Evans,I.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C12N15/09, A01H1/00, C07K1/12, C12N5/10, C12P21/02// (C12N5/10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9826753.7 PI
                                                   CTGTGGCAACACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCTCACGG
                                                                                              AGCGTGTCATGTGCGTAACGGGAAACACATGTTTCTGTTACTTCAATTGTAAAAAGC
                                                                                                                 185 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC
AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACGTGGTCGGGCAA
                                                                                                                                                              CGAAAAGCTTGCTCAAGACAAACTTAAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L1:91),
C1:2N15/00,C12N5/00,(C12N5/00,C12R1:91)
Description of Artificial Sequence: Synthetic sequence FH
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                CTGTGGCAATACGGGACATTGTGACAACCAATGTAAAATCATGGGAGGTGCGGCCCCATGG
                                                                                                                                                                                                                                               CCAAAAGCTTGACCGTGATGCCAAGAAAGTGGTTCCAAAAGGTTGAACATGCG 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        534;
                                                                                                                                                                                                                                                                                                                                                  34 534 bp DNA linear F of genetic expression of polyprotein in plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ray, J.A.
Method of genetic expression of polyprotein in plant
Patent: JP 2002523047-A 3 30-JUL-2002;
SYNGENTA LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MIGUEL FRANCESCO COLETA DE BOLLE, IAN JEFFREY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ,04-DEC-1998 GB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OS Artificial Sequence
PN JP 2002523047-A/3
PD 30-JUL-2002
PF 17-AUG-1999 JP 2000566429
WILLEM FRANS BROEKAERT, ISABELLE ELSA JEANNE
AUGUSTINE FRANCOIS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. 534
/organism="synthetic construct"
/mol type="genomic DNA"
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 215.2; DB 6
Pred. No. 5.2e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1. .534
                                                                                                                                                                                                                                                                                                                                                                                                  GI:33033004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tch 48.3%; al Similarity 98.6%; 217; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                 synthetic construct
synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                 BD223234.1 GI:330.
JP 2002523047-A/3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 217; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANTHONY RAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PC C12N1:
C12R1:91)
PC C12N1:
CC Descri
Key CDS
                                                                                                                                                                                                                                                                                                                                                                                   BD223234
                                                                                                                                                                                                                                                                                                                                                              Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258
                                                                                                275
65
                                                               125
                                                                                                                                                                  335
                                                                                                                                                                                                                                395
                                                                                                                                                                                                                                                               305
                                  215
                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                               BD223234
LOCUS
                                                                                                                                                                                                                                                                                                                 RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
셤
                             ò
                                                          임
                                                                                    ò
                                                                                                                          요
                                                                                                                                                                ઠે
                                                                                                                                                                                          셤
                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                             용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGAAGATGGTCGGGAAA 214
                                                                                                                                                                                                                                257
                                                                                                                                                                                                                                                                                                317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ы
                                                                                                                                 214
                                                                                                                                                  138 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAAGCTAGCAAGACGTGGTCGGCAA 197
                                                                                                                                                                                                 215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                    other sequences; artificial sequences.
1 (bases 1 to 557)
Broekaert,W.F., Francois,I.E.J.A., Bolle,M.F.C.D., Evans,I.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANTHONY RAY
PC C12N15/09, A01H1/00, C07K1/12, C12N5/10, C12P21/02//(C12N5/10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9826753.7.PI
                                                                                                                                                                                                                    198 CTGTGGCAACACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                     258 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . : . -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ቿ
                                                                                                                                 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MIGUEL FRANCESCO COLETA DE BOLLE, IAN JEPFREY EVANS, JOHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L1311,
C12N1,
C12N1,
Description of Artificial Sequence: Synthetic sequence
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                  CCAAAAGCTTGACCGTGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                   378 ccaaaaccrrcacccrcarccaacaaacrccaaaccarcaacarccc
                                                                                                ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                               Length 606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BD223246 557 bp DNA linear F
Method of genetic expression of polyprotein in plant.
BD223246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ray,J.A.
Method of genetic expression of polyprotein in plant
Patent: JP_2002523047-A 15 30-JUL-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 557;
                                                                                                IndelB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF 17-AUG-1999 JP 2000566429
PR 18-AUG-1998 GB 9818001.1,04-DEC-1998 GB
WILLEW FRANS BROSKAERT,ISABELLE ELSA JEANNE
AUGUSTINE FRANCOIS,
                                                                                                  3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 63.7%; Score 284; DB 6; Lu
Best Local Similarity 98.3%; Pred. No. 7.6e-63;
Matches 287; Conservative 0; Mismatches 5;
                                                               DB 6;

    .557
    /organism="synthetic construct"

                                                               Score 287.2; DB 6
Pred. No. 1.1e-63;
0; Mismatches 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (3). (548)
Location/Qualifiers
1. .557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="genomic DNA"
/db_xref="taxon:32630"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SYNGENTA LTD
OS Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BD223246.1 GI:33033016
JP 2002523047-A/15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JP 2002523047-A/15
30-JUL-2002
                                                                 64.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    synthetic construct
synthetic construct
                                                               Query Match
Best Local Similarity 99.0
Matches 289; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C12R1:91),
PC C12N15
CC Descri
Key
FT CDS
                                                                                                                                 155
                                                                                                                                                                                                                                                                                                                                 335
                                                                                                                                                                                                                                                                                                                                                                                                  395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BD223246
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                 ò
                                                                                                                                                              셤
                                                                                                                                                                                               ò
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                셤
```

PAT 17-JUL-2003

446

ô

Gaps

ö

214 197 257

317

à g

```
Subtatograph of the control of the c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65 AGAIATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGAAGGTAGCAAGGAGGAGAA 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                  Dahlia merckii (dahlia)
JP 2002523052-A/4
30-JUL-2002
30-JUL-2009
30-JUL-2009
30-JUL-2009
30-JUL-209
30-JUL-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                    C12N15/09, A01H1/00, C07K1/12, C12N5/10, C12P21/02//(C12N5/10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125 CIGIGGCAACACGGGACATIGIGAAACCAATGIAAATCAIGGGAGGGGGGGGGCGCTCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185 AGCGIGICAICIGCGTAACGGGAAACACAIGIGITICIGITACTICAATIGIAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11:91),
Cl2N15/00,Cl2N5/00,(Cl2N5/00,Cl2R1:91)
Description of Artificial Sequence: Synthetic sequence
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               47.5%; Score 212; DB 6; Length 485; larity 97.7%; Pred. No. 3.5e-44; Conservative 0; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   335 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .488
/organism="synthetic construct"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (3) . .(476) .
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 577 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BD240918
Polynucleotide sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 215; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BD240918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bource
                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BD240918
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                    PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTGGCRATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   275 AGCGTGTCATGTGCGTAACGGGAAACACATGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-AUG-1999 JP 2000566448
18-AUG-1998 GB 9818003.7
IAN JEFFREY EVANS, JOHN ANTHONY RAY
C12N15/09, A01H5/00, C07K14/415, C12N5/10//(C12N5/10, C12R1:91),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BD223245

Bethod of genetic expression of polyprotein in plant.
BD223245.1

BD225245.1

BD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description of Artificial Sequence: Synthetic sequence FH Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 534;
                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                         318 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      335 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 357
                                                                                                                                                                                                                                                                                                                                                                             JP 2002523052-A/22.

Synthetic construct

Synthetic construct

other sequences; artificial sequences.

(bases 1 to 534)

Evans, I.J. and Ray, J.A.

Polynuclectide sequences

Patent: JP 2002523052-A 22 30-JUL-2002;

SYNGENTA LTD

OS Artificial Sequence

PN JP 2002523052-A/22

PD 30-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ë,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1..534
/organism="synthetic construct"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48.3%; Score 215.2; DB 6
llarity 98.6%; Pred. No. 5.2e-45;
Conservative 0; Mismatches 3
                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (76). (525)
Location/Qualifiers
1. .534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C12N5/00, (C12N5/00, C12R1:91)
                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                             534
                                                                                                                                                                                                                                                                            Polynucleotide sequences.
BD240936
                                                                                                                                                                                                                                                                                                                                                      BD240936.1 GI:33050706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 217; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                       RESULT 6
BD240936
LOCUS
                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BD223245
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
```

g

ઠ 셤 ð g

ઠે 셤

ò

ö

Gaps

214

274

184

244

2

ΕH

Mon

source

ORIGIN

ò 셤 ŝ g ò 셤 ò 셤 ઠ 윱

FEATURES

```
PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACGTGGTCGGGCAA 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                         AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACGTGGTCGGCCAA 124
                                                                                                                                                                  CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                           CTGTGGCAACACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCTCACGG 184
                                                                                                                                                                                                                                                   AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                 CGAAAAGCTTGCTCAAGACAAACTTAAAG---CCGAACAACTCGCTCAAGACAAACTTAA 391
                                                                                                                                                                                                                                                                                                                                                                   245 róaggaagcrigcrigcraftrccrigaagcrrcrigaagatrrigcrcaagaagaagacrcc 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C12N15/09, A01H1/00, C07K1/12, C12N5/10, C12P21/02//(C12N5/10, PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   other sequences; artificial sequences.
1 (bases 1 to 446)
Broekaert, W.F., Francois, I.E.J.A., Bolle, M.F.C.D., Evans, I.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9826753.7 PI
                                                                                                                                                                                                                                                                            AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTGCTAACGC
                                                                                     155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGAAGGTCGGGGAAA
                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EVANS, JOHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C12R1:91),
PC C12N15/00,C12N5/00,C12N5/00,C12R1:91)
CC Description of Artificial Sequence: Synthetic sequence
Key Location/Qualifiers
(3). (437).
                                            3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 6; Length 446;
      Length 485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  оыдалая
Method of genetic expression of polyprotein in plant.
BD223239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Method of genetic expression of polyprotein in plant
Patent: JP 2002523047-A 8 30-JUL-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SYNGEMTY LTD
OS Artificial Sequence
DOS 202523047-A/8
PD 30-2002
PP 17-AUG-1999 JP 2000566429
PF 17-AUG-1998 GB 9818001.1,04-DEC-1998 GB
WILLEM FRANKOIS,
PI MIGUEL FRANKOIS,
PI MIGUEL FRANKOIS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                            Indels
    38.8%; Score 173.2; DB 6; ilarity 85.1%; Pred. No. 4e-34; Conservative 0; Mismatches 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13;

    .446
    forganise="synthetic construct"
|mol type="genomic DNA"
|db_xrefe="taxon:32630"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38.6%; Score 172.2; DB 6. llarity 93.3%; Pred. No. 7.3e-34; Conservative 0; Mismatches 13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (3). (437)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BD223239.1 GI:33033009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   synthetic construct
synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JP 2002523047-A/8.
                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ANTHONY RAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                         TG 306
                                                                                                                                                                                                                                                                                                                                                                                                                  TG 393
    Query Match
Best Local Simil
Matches 206; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S:
Matches 180
                                                                                                                                                                                                                                              275
                                                                                                                             65
                                                                                                                                                                                                          125
                                                                                                                                                                                                                                                                                           185
                                                                                                                                                                                                                                                                                                                                    335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             215
                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                                                                392
                                                                                                                                                                                                                                                                                                                                                                                                                                                         305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BD223239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Locus
                                                                                     à
                                                                                                                     원
                                                                                                                                                                    ઠ
                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                     ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                          274
                                                                                                                                                                                                                                                                                                                82 AGATATCACAAAGTGTGAGAGAGAAAGTATGCGAGAAAAGCTAGCAAGACATGGTCAGGAAA 141
                                                                                                                                                                                                                                                                                                                                                                                                   275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                202 GGCGTGCCACGTGCGTGGAGGGAAACACATGTGTTTTTTGTGCTACTTCAAGTGTCCCAAAGC 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          335 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C12N15/09, A01H1/00, C07K1/12, C12N5/10, C12P21/02//(C12N5/10, PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     synthetic construct
synthetic construct
therefore artificial sequences.
1 (bases 1 to 485)
Broekaert,W.F., Francois,I.B.J.A., Bolle,M.F.C.D., Evans,I.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MIGUEL FRANCESCO COLETA DE BOLLE, IAN JEFFREY EVANS, JOHN PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9826753.7 PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PC C12N15/09, A01H1/00, C07K1/12, C12NS/10, C12P21/02//(C12NS/10, C12R1:91),
PC C12N15/00, C12NS/00, (C12NS/00, C12R1:91)
CC Description of Artificial Sequence: Synthetic sequence FH Location/Qualifiers
FY CDS (3). (476).
                                                                                                                                                                                                                                                                                                                                                                        215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----GCTCAAGACTAATGC
                                                                                                                                                                                                                                                                                           155 AGAȚATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           395 CCAAAAGCTTGACCGTGATGCCAAGAAGTGGTTCCAAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAAGAGCTTGACCGTGATGCCAAGAAAGTGATTCCGAACGTTGAACATCCG 343
                                                                                                                                                                                                                                                   30;
                                                                                                                                                                                                            Length 577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mathod of genetic expression of polyprotein in plant Patent: JP 2002523047-A 12 30-JUL-2002; SYNGENTA LTD SYNGENTA LTD OS Artificial Sequence PN JP 2002523047-A/12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BD223243 485 bp DNA linear 1
Method of genetic expression of polyprotein in plant.
                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PF 17-AUG-1999 JP 2000566429
PR 18-AUG-1998 GB 9818001.1,04-DEC-1998 GB
WILLEM FRANS BROEKAERT,ISABELLE ELSA JEANNE
AUGUSTINE FRANCOIS,
                                                                                                                                                                                                        Score 177.2; DB 6;
Pred. No. 3.7e-35;
0; Mismatches 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="synthetic construct"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
                       Location/Qualifiers
                                                                                                    organism="Dahlia merckii"
|mol_type="genomic DNA"
|db_xref="taxon:43367"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (3). (476).
Location/Qualifiers
1. .485
                                          (20). (346)
Location/Qualifiers
Polynucleotide sequences
Key (20). .(3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BD223243.1 GI:33033013
JP 2002523047-A/12.
                                                                                                                                                                                                        Query Match 39.7%;
Best Local Similarity 80.1%;
Matches 234; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAAAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ANTHONY RAY
    SET
```

VERSION KEYWORDS SOURCE ORGANISM

REFERENCE AUTHORS JOURNAL

COMMENT

TITLE

DEFINITION

RESULT 9 BD223243

LOCUS

ö

PI

H

214

source

ORIGIN

FEATURES

```
synthetic construct
synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 174; Conservat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      335 CG 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                318 TG 319
                                         BD223233
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bource
                                                                                  ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
AX046745
LOCUS
DEFINITION
                              RESULT 12
                                                                                                                                                                          REFERENCE
                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                 PAT 17-JUL-2003
                             AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
125 CTGTGGCAACACGGGACATTGTGACCAATGTAAATCATGGGAGGGTGCGGCTCACGG 184
                                            C12N15/09,A01H1/00,C07K1/12,C12N5/10,C12P21/02//(C12N5/10, PC
                                                                                                                                                                                                                                                                                        other sequences; artificial sequences.
1 (bases 1 to 1093)
Broekaert, W.F., Francois, I.B.J.A., Bolle, M.F.C.D., Evans, I.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCGTGTCATGTGCGTAACGGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTGGCAACACGGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCTCACGG 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAAAAGCTTGCTCAAGACAAACTTAAAG----CCGAACAACTCGCTCAAGACAAAACTTAA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ы
                                                                                                                                                                                                                                                                                                                                                                                                                                                             9826753.7 PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUGUSTINE PRANCES.

PI MIGUEL FRANCES.

PI MIGUEL FRANCESCO COLETA DE BOLLE, IAN JEFFREY EVANS, JOHN E ANTHONY RAY

PC CLINIS/09, A01H1/00, C07K1/12, C12NS/10, C12P21/02//(C12NS/10, PC C12N15/1),

PC CLINIS/00, C12NS/00, (C12NS/00, C12R1:91)

CC Description of Arrificial Sequence: Synthetic sequence FH KRY

Location/Qualifiers

FT CDS (3). (1085)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                Ray,J.A.
Method of genetic expression of polyprotein in plant
SYNGENTA LTD
OS Artificial Sequence
PN JP 2002523047-A/13
PN JP 2002523047-A/13
PF 17-AUG-1999 JP 2000566429
PR 18-AUG-1998 GB 9818001.1,04-DEC-1998 GB
WILLEM FRANS BROEKABERT, ISABELLE ELSA JEANNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ب</u>
                                                                                                                                                                                        BD223244
Method of genetic expression of polyprotein in plant.
BD223244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1093;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 38.1%; Score 170; DB 6; Length 10 Best Local Similarity 84.3%; Pred. No. 2.8e-33; Matches 204; Conservative 0; Mismatches 35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .1093
/organism="synthetic construct"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (3). (1085).
Location/Qualifiers
1. .1093
                                                                                                                                                                                                                                 BD223244.1 GI:33033014
JP 2002523047-A/13.
synthetic construct
Bynthetic construct
                                                                                  335 CGAAAAGCTTGCT 347
                                                                                                                 245 cGACGAGGTGGCT 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TG 306
                              275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         392
                                                                                                                                                                                                                ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                         RESULT 11
BD223244
                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
g
                                                        셤
                           ò
                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                            other sequences; artificial sequences.
1 (bases 1 to 522)
Broekaert, W.F., Francois, I.E.J.A., Bolle, M.F.C.D., Evans, I.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT 15-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dimorphotheca sinuata (African daisy)
Dimorphotheca sinuata
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; campanulids; Asterales; Asteraceae; Asteroideae;
Calenduleae; Dimorphotheca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  317
                                                                                                                                                                                                      Ray,J.A.

Method of genetic expression of polyprotein in plant
Patent: JP 2002523047-A 2 30-JUL-2002;
SYNGENTA LTD
OS Artificial Sequence
No JP 2002523047-A/2
PD 30-JUL-2002
PP 17-AUG-1999 GB 918001.1,04-DEC-1998 GB 9826753.7 PI
WILLEM FRANS BROEKAERT, ISABELLE ELSA JEANNE
PI MIGUEL FRANCESCO COLETA DE BOLLE, IAN JEFFREY EVANS, JOHN PI
                                                                                                                                                                                                                                                                                                                                                                                        9826753.7 PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C12N15/09, A01H1/00, C07K1/12, C12N5/10, C12P21/02//(C12N5/10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          215 CTGTGGCAATACGGGACATTGTGACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           118 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACGTGGTCGGGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PC C12R15/09, AVADA, C. C12R5/00, C12R1:91)
PC C12R15/00, C12R5/00, (C12R5/00, C12R1:91)
PC C12R15/00, C12R5/00, (C12R5/00, C12R1:91)
CC Description of Artificial Sequence: Synthetic sequence
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
0
522 bp DNA linear P. genetic expression of polyprotein in plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 6; Length 522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .522
/organism="synthetic construct"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37.9%; Score 169.2; DB 6
ilarity 95.6%; Pred. No. 4.4e-33;
Conservative 0; Mismatches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3 from Patent WO0068405.
                                                            BD223233.1 GI:33033003 JP 2002523047-A/2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AX046745.1 GI:11876281
```

```
BD223237.1 GI:33033007 JP 2002523047-A/6.
                                                                                                                                                                                                                                                                                                                                                                                                                        JP 2002523047-A/6
30-JUL-2002
                                                                                                                                                                                                                                                                                      synthetic construct
synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C12R1:91),
PC C12N1E
CC Descri
Key
FT CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        215
                215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                         RESULT 15
BD223237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                    LOCUS
                                   g
                                                         ે
                                                                                          q
                                                                                                                       ઠે
                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                ઠે
                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT 15-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                             146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dimorphotheca sinuata
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots,
asterids, campanulids, Asterales, Asteraceae, Asteroideae,
                                                                                                                                                                                                                                                                       CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           147 CTGTGGCAACACGGGACACTGTGACGACCAGTGTAAGTCGTGGGAGACTGCAGCCCATGG 206
                                                                                                                                                                                                                                                                                                                             AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                            207 TGCGTGTCATGTGCGTGGTGGGGAAACACATGTGCTTCTGCTACTTCAATTGTAAAGAAGC 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                  CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATG 393
                                                                                                                                                                                                                                                                                                                                                                                                           ceaaaaecrirecceaaeacaaecreaacecreaaaaarreecereareacerraaae 325
                                                                                                                                                                                                                                     155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                           ö
                                                                                                                                                              37.8%; Score 168.6; DB 6; Length 460;
llarity 81.6%; Pred. No. 6.3e-33;
Conservative 0; Mismatches 44; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 6; Length 503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Dimorphotheca sinuata"
/mol_type="unassigned DNA"
/db_xref="taxon:112408"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 6.3e-33;
0; Mismatches 44;
                                                                                               sinuata"
                                                      (SD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (SD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dimorphotheca sinuata (African daisy)
    1 Miao,G.H., Weng,Z. and Famodu,O.O.
Miant defensins
Patent: WO 0068405-A 3 16-NOV-2000;
B.I. DU PONT DE NEMOURS AND COMPANY
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Miao,G.H., Weng,Z. and Famodu,O.O. Plant defensins Patent: WO 0068405-A 1 16-NOV-2000; B.I. DU PONT DE NEMOURS AND COMPANY LOCATION/Qualifiers
                                                                                           /organism="Dimorphotheca si
/mol_type="unassigned DNA"
/db xref="taxon:112408"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 168.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AX046743 503 bp
Sequence 1 from Patent W00068405.
AX046743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Calenduleae; Dimorphotheca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX046743.1 GI:11876280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 37.8%;
Best Local Similarity 81.6%;
Matches 195; Conservative
                                                                              1. .460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            416
458
474
479
482
502
                                                                                                                                                                             Similarity
                                                                                                                                                                          Local Simia
                                                                                                                                                                                                                                                                       215
                                                                                                                                                                                                                                                                                                                            275
                                                                                                                                                                                                                                                                                                                                                                                  335
                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unsure
unsure
unsure
unsure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unsure
unsure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unsure
unsure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                   source
                                                                                                                                                                              Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
REFERENCE
AUTHORS
                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AX046743
                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                            PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PI MIGUEL FRANCESCO COLETA DE BOLLE, IAN JEFFREX EVANS, JOHN PAY ANTHONY RAY PC C12N15/09, A01H1/00, C07K1/12, C12N5/10, C12P21/02//(C12N5/10, PC
274
                                   275 AGCGTGTCATGTGCGTAACGGGAAACACATGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          138 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAGCTAGCAAGACGTGGTCGGGCAA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198 CTGTGGCAACACGGGACATTGTGACAACCAATGTAAATCATGGGGAGGTGCGGCCCATGG 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   other sequences; artificial sequences.
1 (bases 1 to 534)
Broekaert,W.F., Francois,I.E.J.A., Bolle,M.F.C.D., Evans,I.J. and
                                                                                                                                                                                                                       335 CGAAAAGCTTGCTCAAGACAAACTTAAAAGCCGAACAACTCGCTCAAGACAAACTTAATG 393
                                                                                                                                                                                                                                                          260 CGAAAAGCTTGCCCAAGACAAGCTCAACGCTGAAAAATTCGGCCGTGATGACGTTAAAA 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGTGCGGCCCATGG
                                                                                                                                             200 TGCGTGTCATGCGTGGTGGAAACACATGTGCTTCTGCTACTTCAATTGTAAAGAAGC
  CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9826753.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (1391),
CONTROLO CIRNS/00, (CIRNS/00, CIRN:91)
Description of Artificial Sequence: Synthetic sequence
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGT 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                258 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGT 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 534;
                                                                                                                                                                                                                                                                                                                                                                                                        אום אום 534 bp DNA linear F
Method of genetic expression of polyprotein in plant.
BD223237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Method of genetic expression of polyprotein in plant
Patent: JP 2002523047-A 6 30-JUL-2002;
SYNGBNTA LTD
SX Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PF 17-AUG-1999 JP 2000566429
PR 18-AUG-1998 GB 9818001.1,04-DEC-1998 GB
WILLEW FRANS BROBKAERT,ISABELLE ELSA JEANNE
AUGUSTINE FRANCOIS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 37.5%; Score 167.2; DB 6; Best Local Similarity 98.3%; Pred. No. 1.5e-32; Matches 169; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .534
/organism="synthetic construct"
/mol_type="genomic DNA"
/db_xref="taxon:32630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
1. .534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search completed: March 18, 2005, 14:31:02 Job time : 2320 secs
```

THIS PAGE BLANK (USPTO)

```
υ
                                                                                                                                                         March 18, 2005, 06:45:35 ; Search time 388 Seconds
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                           Run on:
```

	(without alignments) 6804.651 Million cell updates/sec
Title: Perfect score:	US-09-763-019-5 446
Sequence:	1 atggtgaatcggtcggttgcttccaaacgttgaacatccg 446
Scoring table: IDENTITY NUC	IDENTITY NUC

4390206 segs, 2959870667 residues Gapop 10.0 , Gapext 1.0 Searched:

8780412 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

N\_Geneseq\_16Dec04:\* genesegn1980s: \*
genesegn1990s: \*
genesegn2000s: \* Database :

genesequ2001as: genesequ2001bs: genesequ2002as: genesequ2002as: genesequ2003as: genesequ2003bs: geneseqn2003ds:\* geneseqn2004as:\* geneseqn2004bs:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Aaz51379 Dahlia me	Aaz99323 DNA encod	Aaz99326 DNA encod	Aaz99336 DNA encod	Aaz51396 Portion o	Aaz99325 DNA encod	Aaz99335 DNA encod	Adm77231 Ironweed	Adm77214 Ironweed	Aaz51378 Dahlia me	Aaz99333 DNA encod	Aaz99329 DNA encod	Aaz99334 DNA encod	Aaz99324 DNA encod	Aaa54387 Plant def	Adm77186 African d	Aaa54386 Plant def	Adm77184 African d	Aaz99327 DNA encod	Aaz99332 DNA encod
SUMMARIES	ΩΙ	AAZ51379	AAZ99323	AA299326	AAZ99336	AAZ51396	AAZ99325	AAZ99335	1 ADM77231	1 ADM77214	AAZ51378	AAZ99333	AAZ99329	AAZ99334	AAZ99324	AAA54387	1 ADM77186	AAA54386	1 ADM77184	AAZ99327	AAZ99332
	% Query Match Length DB	446 3	446 3	606 3	557 3	534 3	534 3	485 3	529 1	579 1	577 3	485 3	446 3	1093 3	522 3	460 5	460 1	503 5	503 1	534 3	434 3
	% Query Match 1	100.0	100.0	64.4	63.7	48.3	48.3	47.5	47.0	45.5	39.7	38.8	38.6	38.1	37.9	37.8	37.8	37.8	37.8	37.5	37.2
	Score	446	446	287.2	284	215.2	215.2	212	209.4	203	177.2	173.2	172.2	170	169.2	168.6	168.6	168.6	168.6	167.2	166
	Result No.	-	7	٣	4	ហ	9	7	80	თ	10	11	12	13	14	15	16	17	18	19	20

WO200011196-A1

Aaz99331 DNA encod	Aaz99330 DNA encod	Aaz99338 DNA encod	Aaz99339 DNA encod	Aaz51397 Portion o	Aaz99328 DNA of pF	Aaz99337 DNA encod	Adm77229 Sunflower	Aaz51376 Dahlia me	Aaa54392 Plant def	Adm77196 Mexican r	Aaa54390 Plant def	Adm77192 Mexican r	Aaa54391 Plant def	Adm77194 Mexican r	Aaa54396 Plant def	Adm77204 Mexican r	Aaa54394 Plant def	Adm77200 Mexican r	Aac84841 Sunflower	Aaa54395 Plant def	Adm77202 Mexican r	Aaa54397 Plant def	Adm77206 Mexican r	Aaz51375 Dahlia me
AAZ99331	AAZ99330	AAZ99338	AAZ99339	AAZ51397	AAZ99328	AAZ99337	L ADM77229	AA251376	AAA54392	1 ADM77196	AAA54390	L ADM77192	AAA54391	L ADM77194	AAA54396	1 ADM77204	AAA54394	1 ADM77200	AAC84841	AAA54395	1 ADM77202	AAA54397	1 ADM77206	AAZ51375
37 3	443 3	38	75 3	16 3	16 3	35 3	51 13	23 3	57 5	57 11	53 5	53 11	3 5	33 11	458 5	58 11	50 5	50 11	55 5	54 5	54 11	72 5	72 11	399 3
43.	44	48	'n	æ	ы	4	46	Ņ	4	4	46	4(	9	ĕ	4	4	4	4	Š	4	4	4	4	ä
37.2	37.2	37.2	37.2	37.1	37.1	36.8	36.1	35.4	35.1	35.1	35.1	35.1	35.1	35.1	34.7	34.7	34.7	34.7	34.6	34.3	34.3	34.3	34.3	32.9
166	166	166	166	165.6	165.6	164	161	157.8	156.4	156.4	156.4	156.4	156.4	156.4	154.8	154.8	154.8	154.8	154.2	153.2	153.2	153.2	153.2	146.8
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

## ALIGNMENTS

RESULT 1

Antimicrobial protein; Dm-AMP1; transgenic plant; microbial infection; bacteria; fung1; field crop; fruit; vegetable; canola; banana; sunflower; apple; ds. 1. .446 /\*tag= a /product= "Antimicrobial protein Dm-AMP1" /note= "Does not include stop codon" /partial "Mature Dm-AMP1 protein" Dahlia merckii antimicrobial protein Dm-AMP1 gene. 1. .176 /\*tag= e /note= "excludes intron" Location/Qualifiers AAZ51379 standard; DNA; 446 BP /number= 1 65. .156 /\*tag= c 177. .326 /\*tag= f /product= 1. .64 /\*tag= b 06-JUN-2000 (first entry) /\*tag= d /number= ; .57. .446 number= Dahlia merckii. misc\_feature sig\_peptide mat\_peptide AAZ51379; intron exon exon Key CDS AAZ51379 

Evans IJ,

```
61 TCAGGTTATCAAATCTTTAGTTCATTTATTGAATATGATAGTATTTATATATTTTATGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 TITIATGTGTTCTGACAAGTTGCAAATATTGAGTAGATATCGCATCCGTTAGTGGAGAAC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence encodes a Dahlia antimicrobial protein (AMP) 1. The AMP1 protein is used to produce transgenic plants, using the method of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce proteins in plants. The linker propeptide comprising a cleavage site, whereby the expressed polyprotein is post-translationally processed into the component protein molecules. The propeptide sequence is rich in amino and X N, S and I and contains dispetidic sequences consisting of either two acidic, two basic or one acidic and one basic residue as a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ATGGTGAATCGGTCGGTTGTCCGCGTTCTGATCTTTTGTGGTCCCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ATGGTGAATCGGTCGGTTGCGTTCTCCGCGTTCGTTCTGATCCTTTTCGTGCTCGCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    coving expression of polyproteins in plants involves coexpression or more proteins in plants within a single transcription unit.
                               Antimicrobial protein; AMPl; transgenic plant; linker propeptide;
protein expression; 88.

    .446
    /*tag= a
    note= "contains 1 intron; no termination codon"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 446;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 446 BP; 128 A; 86 C; 104 G; 128 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Evans IJ,
DNA encoding the Dahlia antimicrobial protein 1 (AMP1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 446; DB 3; L
Pred. No. 9.9e-113;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        De Bolle MFC,
                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 1, Fig 1, 151pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
ilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Francois IEJA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-GB002716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98GB-00018001
98GB-00026753
                                                                                                                                                                                                                                             /number= 1
65. .156
/*tag= c
                                                                                                                                                                                                             1. .64
/*tag= b
                                                                                                                                                                                                                                                                                                                           157. .446
/*tag= d
                                                                                                                                                                                                                                                                                                                                                             /number= 2
177. .314
/*tag= e
                                                                                                                                                                                                                                                                                                         'number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-246564/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAY84050
                                                                                           Dahlia merckii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ZENE ) ZENECA
                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200011175-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Broekaert WF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-AUG-1998;
04-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                   mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Improving
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S:
Matches 446
                                                                                                                                                                                                                                                                   intron
                                                                                                                                                                                                                                                                                                                             exon
                                                                                                                                                                                                             exon
                                                                                                                                 Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TW0
 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTTATGTGTTCTGACAAGTTGCAAATATTGAGTAGATATCGCATCCGTTAGTGGAGAAC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCCAATACGGGACATTGTGACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                       The present sequence is a Dahlia merckii cDNA encoding an antimicrobial preproprotein Dm-AMPI. This sequence is useful in the production of transgenic plants which show improved resistance to infections by microorganisms such as bacteria and fungi. Transgenic plants include e.g. field crops, fruits and vegetables, such as canola, sunflower, tomato, apple, banana, pear and mango
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 ACATGIGITITCIGITACTICAATIGIAAAAAGCCGAAAAGCTIGCTCAAGACAACTIA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAGCTTGACCGTGATGCCAAGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGGTGAATCGGTCGGTTGCGTTCTCGTTCTTTTCGTGCTCGTGCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTATGTGTTCTGACAAGTTGCAAATATTGAGTAGATATCGCATCCGTTAGTGGAGAAC
                                                                                                                                                                                                                                                             Polynucleotide sequences and expression products useful for producing transgenic plants that are resistant to microbial infections.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 ATGGTGAATCGGTTGCGTTCTCCGCGTTCGTTCTGATCCTTTTCGTGCTCGCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAGGTTATCAAATCTTTAGTTCATTTATTGAATATGATATGTATTTATATTCTTTTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCAATGTAAATCATGGGAGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATGTTTTCTGTTACTTCAATTGTAAAAAGCCGAAAAGCTTGCTCAAGACAAACTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAGCTTGACCGTGATGCCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
100.0%; Score 446; DB 3; Length 446;
Best Local Similarity 100.0%; Pred. No. 9.9e-113;
Matches 446; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 446 BP; 128 A; 86 C; 104 G; 128 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTGGTTCCAAACGTTGAACATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGTGGTTCCAAACGTTGAACATCCG
                                                                                                                                                                                                                                                                                                                       English.
                                                                                       98GB-00018003
                                                   99WO-GB002720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAZ99323 standard; DNA; 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                     Claim 1; Fig 1A; 77pp;
                                                                                                                                                                                                     2000-237658/20
                                                                                                                           (ZENE ) ZENECA LTD.
                                                                                                                                                                   Ray JA;
                                                                                                                                                                                                                       P-PSDB; AAY70315.
                                                 17-AUG-1999;
                                                                                     18-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-JUL-2000
             02-MAR-2000
```

61 61 121 121 181 181

ઠે g ઠે ద ò g ò g 241

g ઠે 셤

301

241

ò

361 421

g

ઠ

421

361

ઠે

AAZ99323;

RESULT 2
AAZ99323
ID AAZ9
XX
AC AAZS
XX
DT 03-U

ŏ

Ray JA;

120

9 9

Gaps

ö

```
(ZENE ) ZENECA LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dahlia merckii.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200011175-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-AUG-1998;
04-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-MAR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                                                                                                        AAZ99336;
                                                                                                                                                                                138
                                                                                                                                                                                                215
                                                                                                                                                                                                               198
                                                                                                                                                                                                                                275
                                                                                                                                                                                                                                                258
                                                                                                                                                                                                                                                                                                                 378
                                                                                                                                                                                                                                                                 335
                                                                                                                                                                                                                                                                                                395
                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Key
 8888888888888888888888888
                                                                                                                                                                ð
                                                                                                                                                                              셤
                                                                                                                                                                                                ò
                                                                                                                                                                                                             셤
                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                 420
                                                         300
                                                                                        360
ACCAATGTAAATCATGGGAGGGGGGCGCCATGGGCGTGTCATGTGCGTAACGGGAAAC 300
                                                                                                        ACATGTGTTTCTGTTACTTCAATTGTAAAAAGCCGAAAAGCTTGCTCAAGACAAACTTA 360
                                                                                                                                                                                                                                                                               Antimicrobial protein; AMPl; transgenic plant; linker propeptide;
protein expression; plant defensin; RsAFP2; antifungal protein; AFP2; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Improving expression of polyproteins in plants involves coexpression of two or more proteins in plants within a single transcription unit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence encodes a protein of the invention, comprising the
                                                                                                                                 AAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAGCTTGACGTGATGCCAAAGA
                                        TATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTGACA
                                                        ACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGGAAAC
                                                                                        ACATGTGTTTCTGTTACTTCAATTGTAAAAAGCCGAAAAGCTTGCTCAAGACAAACTTA
                                                                                                                      AAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAGCTTGACCGTGATGCCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ray JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Evans IJ,
                                                                                                                                                                                                                                                                DNA encoding a fusion protein of DmAMP1 and RsAFP2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                De Bolle MFC,
                                                                                                                                                       AAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                  AAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                /*tag= c
/note= "encodes RsAFP2"
                                                                                                                                                                                                                                                                                                                                                                                 DmAMP1"
                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
76. .597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example 2; Fig 11; 151pp; English
                                                                                                                                                                                                                                                                                                                                                       /*tag= a
160 .309
/*trag= b
/note= "encodes Di
/*tag= c
                                                                                                                                                                                                               AAZ99326 standard; DNA; 606 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Francois IEJA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-GB002716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98GB-00018001
98GB-00026753
                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-246564/21.
P-PSDB; AAY84059.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ZENE ) ZENECA LID.
                                                                                                                                                                                                                                                                                                        Synthetic.
Dahlia merckii.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                       WO200011175-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Broekaert WF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18-AUG-1998;
04-DEC-1998;
                                                                                                                                                                                                                                                03-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                        02-MAR-2000
                                                        241
                                                                                                                                                                                                                               AAZ99326;
         121
                        181
                                        181
                                                                        241
                                                                                        301
                                                                                                        301
                                                                                                                        361
                                                                                                                                       361
                                                                                                                                                        421
                                                                                                                                                                      421
                                                                                                                                                                                               RESULT 3
                                                                                                                                                                                                     AAZ99326
                                     ద
                                                       ઠે
                                                                      g
                                                                                       ò
                                                                                                     셤
                                                                                                                      ઠે
                                                                                                                                       셤
                                                                                                                                                       ઠે
                                                                                                                                                                      유
                                                                                                                                                                                                                       ò
```

```
mature proteins of the plant defensins, the Dahlia antimicrobial protein (AMP) 1 and the antifungal protein 2 (APP2), linked by a linker propeptide of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce proteins in plants. The linker propeptide comprising a cleavage site, whereby the expressed polyprotein is post-translationally processed into the component protein molecules. The propeptide sequence is rich in amino acide A, V, S and T and contains dispeptidic sequences consisting of either two acidic, two basic or one acidic and one basic residue as a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACGTGGTCGGGCAA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGTGGCAACACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         318 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Antimicrobial protein; AMP1; transgenic plant; linker propeptide;
protein expression; plant defensin; RBAFP2; antifungal protein; AFP2; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAAAAGCTTGACCGTGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCCG 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
3. .548
/*tag= a /*tag= /product= "fusion protein of DmAMP1 and RsAFP2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 3; Length 606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 606 BP; 189 A; 136 C; 137 G; 144 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 287.2; DB 3; Length Pred. No. 6.1e-69; Indels 0; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              encoding a fusion protein of DmAMP1 and RSAFP2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-GB002716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98GB-00018001
98GB-00026753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAZ99336 standard; DNA; 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-JUL-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 99.0
Matches 289; Conservative
```

P-PSDB; AAY84069

```
AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACGTGGTCGGGCAA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTGGCAACACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       275 AGCGTGTCATGTGCGTAACGGGAAACACATGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Antimicrobial protein, AMP1, transgenic plant, linker propeptide,
protein expression, plant defensin, RsAFP2; antifungal protein, AFP2; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence corresponds to the region between XhoI and SacI sites of plant transformation vector pFAJ3106, which encompass the codin region for Dahlia merckii antimicrobial protein, Dm-AhWI. The vector is useful in the production of transgenic plants which show improved resistance to infections by microorganisms such as bacteria and fungi. Transgenic plants include e.g. field crops, fruits and vegetables, such as canola, sunflower, tomato, apple, banana, pear and mango
                                                                                                                                                                                                                                                                                                                                                                                                 Polynucleotide sequences and expression products useful for producing transgenic plants that are resistant to microbial infections.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              215 CTGTGGCAATACGGGACATTGTGAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 3; Length 534;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 534 BP; 164 A; 118 C; 122 G; 130 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA encoding a fusion protein of DmAMP1 and RsAFP2.
/product= "Antimicrobial protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
48.3%; Score 215.2; DB
Best Local Similarity 98.6%; Pred, No. 4e-49;
Matches 217; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers 76. .522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 3; Fig 7; 77pp; English.
                                                                                                                                         99WO-GB002720
                                                                                                                                                                                     98GB-00018003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAZ99325 standard; DNA; 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag=
                                                                                                                                                                                                                                                                                                                            WPI; 2000-237658/20.
P-PSDB; AAY70323.
                                                                                                                                                                                                                                 (ZENE ) ZENECA LTD.
                                                                                                                                                                                                                                                                                Evans IJ, Ray JA;
                                            WO200011196-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dahlia merckii.
Unidentified.
                                                                                                                                                                                   18-AUG-1998;
                                                                                                                                         17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-JUL-2000
                                                                                          02-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAZ99325;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAZ9932!
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                         The present sequence encodes a protein of the invention, comprising the mature proteins of the plant defensins, the Dahlia antimicrobial protein (AMP) I and the antifugal protein 2 (RaAFP2), linked by a linker propeptide of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce proteins in plants. The linker propeptide component protein in spost-cranslationally processed into the component protein molecules. The propeptide sequence is rich in animo acids A, V, S and T and contains dipeptidic sequences consisting of either two acidic, two basic or one consisting a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGAAGACGTGGTCGGGCAA 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          125 CTGTGGCAACACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCTCACGG 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAAAAAGCTTGCTCAAGACAAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Antimicrobial protein; DmAMP; transgenic plant; microbial infection; bacteria; fungi; field crop; fruit; vegetable; canola; banana; sunflower; apple; plant transformation vector; ds.
                                                                                                                               Improving expression of polyproteins in plants involves coexpression of two or more proteins in plants within a single transcription unit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185 AGCGTGTCATGTGCGTAACGGGAAACACATGTTTCTGTTACTTCAATTGTAAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Portion of pFAJ3106 encoding Dahlia merckii antimicrobial protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAAAAGCTTGACCGTGATGCCAAGAAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAAGCTTGACCGTGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCCG 356
                   Ray JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 63.7%; Score 284; DB 3; Length 557; Best Local Similarity 98.3%; Pred. No. 4.5e-68; Matches 287; Conservative 0; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 557 BP; 164 A; 122 C; 143 G; 128 T; 0 U; 0 Other;
                   Evans IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5; Indels
              De Bolle MFC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers 76. .525
                                                                                                                                                                                                    Disclosure; Fig 31; 151pp; English
            Broekaert WF, Francois IEJA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAZ51396 standard; DNA; 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-JUN-2000 (first entry)
                                                        WPI; 2000-246564/21
```

215

셤 ઠે

ò g ò 유 ઠે 셤

g

335 245 395 305

AAZ5139

Dahlia merckii. Synthetic.

274

Gape

ò

```
The present sequence encodes a protein of the invention, comprising the mature proteins of the plant defensins, the Dahlia antimicrobial protein (AMP) I and the antifungal protein 2 (RBAFP2), linked by a linker propeptide of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce proteins in plants. The linker propeptide comprising a cleavage site, whereby the expressed polyprotein is posttranslationally processed into the component protein molecules. The translationally processed into the component protein molecules. The chropitide sequence is rich in amino acids A, V, S and T and contains dipeptidic and one basic residue as a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACGTGGTCGGGCAA 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Antimicrobial protein; AMP1; transgenic plant; linker propeptide;
protein expression; plant defensin; RSAFP2; antifungal protein; AFP2; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             155 AGATATCGCATCCGTTAGTCGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Improving expression of polyproteins in plants involves coexpression two or more proteins in plants within a single transcription unit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Broekaert WF, Francois IEJA, De Bolle MFC, Evans IJ, Ray JA;
                                                                                                                                                                                                                      Location/Qualifiers
3. .476
/*tag= a
/product= "fusion protein of DmAMP1 and RsAFP2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               47.5%; Score 212; DB 3; Length 485; 97.7%; Pred. No. 3e-48; tive 0; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 485 BP; 139 A; 104 C; 128 G; 114 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 284
                    DNA encoding a fusion protein of DmAMP1 and RSAFP2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Fig 30; 151pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-GB002716.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98GB-00018001
98GB-00026753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 97.71
Matches 215; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-246564/21.
P-PSDB; AAY84068.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ZENE ) ZENECA LTD.
                                                                                                                                  Synthetic.
Dahlia merckii.
Unidentified.
                                                                                                                                                                                                                                                                                                                                           WO200011175-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                 17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-AUG-1998;
04-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                     02-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335
                                                                                                                                                                                                                             Key
    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence encodes a protein of the invention, comprising the mature proteins of the plant defensing, the Dahlia antimicrobial protein (AMP) I and the antifungal protein 2 (AMP), linked by a linker propertied of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce proteins in plants. The linker propeptide comprising a cleavage site, whereby the expressed polyprotein is post-translationally processed into the component protein molecules. The propeptide sequences is rich in amano acids A, V, S and T and contains dipeptidic sequences consisting of either two acidic, two basic or one acidic and one basic residue as a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         258 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Improving expression of polyproteins in plants involves coexpression of two or more proteins in plants within a single transcription unit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                            Ray JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 48.3%; Score 215.2; DB 3; Length 534; Best Local Similarity 98.6%; Pred. No. 4e-49; Matches 217; Conservative 0; Mismatches 3; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 534 BP; 164 A; 118 C; 122 G; 130 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                            Evans IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     335 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               318 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTC 357
                                                                                                                                                                                                                                                                                                                                                                                                            De Bolle MFC,
160. .309
/*tag= b
/note= "encodes DmAMP1"
370. .538
/*tag= c
/note= "encodes RsAFP2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 2; Fig 9; 151pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                            Broekaert WF, Francois IEJA,
                                                                                                                                                                                                                                                  99WO-GB002716
                                                                                                                                                                                                                                                                                            98GB-00018001
98GB-00026753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAZ99335 standard; DNA; 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     03-JUL-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-246564/21.
P-PSDB; AAY84058.
                                                                                                                                                                                                                                                                                                                                                             (ZENE ) ZENECA LTD.
                                                                                                                                                         WO200011175-A1
                                                                                                                                                                                                                                                                                            18-AUG-1998;
04-DEC-1998;
  misc_feature
                                                                     misc_feature
                                                                                                                                                                                                                                                  17-AUG-1999;
                                                                                                                                                                                                      02-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAZ99335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ99335
ID AAZ9
XX
AC AAZ9
XX
DT 03-J
```

oŧ

274 184

유 ઠે 셤

ઠ 엄 ઢ g Š

```
CCAAAAGCTTGACCGTGATGCCAAGAAGTGGTTCCAAACGTTGAACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Famodu OO, Hr
Rafalski JA,
                                                                                                                                                                                                                                                                                                                                             24-JUL-2003
                                                                                                                                   ADM77214;
 395
                                                                        RESULT 9
ADM77214
                                                                                                      ò
                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to an isolated nucleic acid molecule (either an DEST, expressed sequence tag or an EST contig) encoding a plant defensin or its mature form, or the complement of them. Also included are a DNA construct comprising the novel nucleic acid (operably linked to a promoter that drives expression in a host cell), an expression cassette promoter that drives expression in a host cell), an expression cassette its genome the DNA construct, a host cell having stably incorporated into plant pathogen e.g. soybean cyst nematode (Sclerotinia sclerotionum). The nucleic acid construct is useful for preparing a composition for treating fungal infections, e.g. Candidiasis. The present sequence is either an or its mature form.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAAAAACTCGCTCAAGATAAGCTAAAAGCAGAAGAGCTTGCTAAAGACAAACTCAAAGG 317
                                                                                                                                                                                                                                                                                                                                                                                                    ďĶ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                    Presnail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New nucleic acid molecule, useful for preparing a composition for treating fungal infections, e.g. Candidiasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 11; Length 529;
                                                                                                                                                   Ironweed; ss; EST; expressed sequence tag; defensin; soybean cyst nematode; pesticide; plant; plant pathogen; Sclerotinia sclerotiorum; fungal infection; Candidlasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 529 BP; 178 A; 88 C; 111 G; 148 T; 0 U; 4 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
47.0%; Score 209.4; DB 11; Length
Best Local Similarity 82.5%; Pred. No. 1.6e-47;
Matches 240; Conservative 0; Mismatches 51; Indels
                                                                                                                                                                                                                                                                                                                                                                                                  Miao G,
                                                                                                                                                                                                                                                                                                                                                                                                Mccutchen BF,
                                                                                                                          Ironweed cDNA encoding mature defensin #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID NO 48; 69pp; English.
                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                               In AL,
                                                                                                                                                                                                                                                                                                                                                               (PION-) PIONEER HI-BRED INT INC.
                                                                                                                                                                                                                                                                                                                                   25-OCT-2001; 2001US-00030516.
                                                                                                                                                                                                                                                                                                     21-JUN-2002; 2002US-00178449.
                                ADM77231 standard; cDNA; 529
                                                                                            03-JUN-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                               Herrmann R,
                                                                                                                                                                                                                Vernonia mespilifolia.
                                                                                                                                                                                                                                                                                                                                                                                                             Weng Z;
                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-851760/79.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; ADM77232.
                                                                                                                                                                                                                                           US2003140368-A1.
                                                                                                                                                                                                                                                                                                                                                                                                             Rafalski JA,
                                                                                                                                                                                                                                                                           24-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                             Famodu 00,
                                                                ADM77231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            335
```

g ò g ò 셤 ઠ

```
The invention relates to an isolated nucleic acid molecule (either an EST, expressed sequence tag or an EST contig) encoding a plant defensin or its mature form, or the complement of them. Also included are a DNA construct comprising the novel nucleic acid (operably linked to a promoter that drives expression in a host cell), an expression cassette comprising the DNA construct, a host cell having stably incorporated into its genome the DNA construct, an isolated polypeptide and impacting a plant pathogen e.g. soybean cyst nematode (Sclerotinia sclerotioum). The nucleic acid construct is useful for preparing a composition for treating fungal infections, e.g. Candidiasis. The present sequence is either an EST (expressed sequence tag) or an EST contig encoding a plant defensin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92 AGAAATCTCGAGTGTGAGGAGGTATGCGAGAGAGGCTAGCAAGACATGGTCAGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAGGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCTAAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Presnail JK;
318 AGATAAGTTTGACCATGATGCAAAAGAAGTAGTACCAAATGTCGAACATCC 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New nucleic acid molecule, useful for preparing a composition for treating fungal infections, e.g. Candidiasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match

45.5%; Score 203; DB 11; Length 579;
Best Local Similarity 81.1%; Pred. No. 9.5e-46;
Matches 236; Conservative 0; Mismatches 55; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 579 BP; 198 A; 97 C; 117 G; 167 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ironweed; 88; BST; expressed sequence tag; defensin; soybean cyst nematode; pesticide; plant; plant pathogen; Sclerotinia sclerotiorum; fungal infection; Candidiasis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Miao G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mccutchen BF,
                                                                                                                                                                                                                                                                                                                                                                             Ironweed cDNA encoding mature defensin #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; SEQ ID NO 31; 69pp; English.
                                                                                                                                                                                          BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lu AL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (PION-) PIONEER HI-BRED INT INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-JUN-2002; 2002US-00178449.
                                                                                                                                                                                   ADM77214 standard; cDNA; 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25-OCT-2001; 2001US-00030516.
                                                                                                                                                                                                                                                                                                          03-JUN-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Herrmann R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vernonia mespilifolia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Weng Z;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2003-851760/79.
P-PSDB; ADM77215.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or its mature form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US2003140368-A1.
```

셤 ò g

```
AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (ZENE ) ZENECA LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synthetic.
Dahlia merckii.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200011175-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-MAR-2000
                                                                                                                                                                                                                                                                                                                                      395
  155
                                         82
                                                                                                                         142
                                                                                                                                                                                                                                                 335
                                                                                                                                                                                                                                                                                            262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAZ99333;
                                                                                  215
                                                                                                                                                                                                                                                                                                                                                                             292
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 1
AAZ99333
                                셤
                                                                                  ઠે
                                                                                                            셤
                                                                                                                                                          ઠે
                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequence is a Dahlia merckii cDNA encoding an antimicrobial preproprotein Dm2.5. This sequence is useful in the production of transgenic plants which show improved resistance to infections by microorganisms such as bacteria and fungi. Transgenic plants include e.g. field crops, fruits and vegetables, such as canola, sunflower, tomato, apple, banana, pear and mango
                   272 TGAAAAACTCGCTCAAGATAAAGCTGAAGAGCTTGCAAAAGACAAACTCAAGGC 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= b
104. .253
|/tag= c
|/product= "Mature Dm2.5 protein"
254. .343
|/*tag= d
|/note= "Encodes protein which may be used as cleavable
linker in the co-expression of multiple proteins"
CGAAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Polynucleotide sequences and expression products useful for producing transgenic plants that are resistant to microbial infections.
                                                                                                                                                                                                                                                                                                                                                                                              Antimicrobial protein; DmAMP; Dm2.5; transgenic plant; microbial infection; bacteria; fungi; field crop; fruit; vegetable; canola; banana; sunflower; apple; ss.
                                                                                  445
                                                                                                      332 AGATAGACCATGATGCAAAAGAAGTAGTACCAAATGTCGAACATC 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 39.7%; Score 177.2; DB 3; Length 577; Best Local Similarity 80.1%; Pred. No. 1.2e-38; Matches 234; Conservative 0; Mismatches 28; Indels 30
                                                                              395 CCAAAAGCTTGACCGTGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 577 BP; 178 A; 96 C; 140 G; 163 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Antimicrobial protein Dm2.5"
                                                                                                                                                                                                                                                                                                                                                       Dahlia merckii antimicrobial protein Dm2.5 cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product= "Antimicrobi
/note= "Preproprotein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
20. .346
/*tag= a
                                                                                                                                                                                                                             AAZ51378 standard; cDNA; 577 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Fig 3; 77pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-GB002720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98GB-00018003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note=
20. .103
                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-237658/20.
P-PSDB; AAY70314.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ZENE ) ZENECA LID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Evans IJ, Ray JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dahlia merckii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200011196-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-AUG-1999;
                                                                                                                                                                                                                                                                                                                06-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mat_peptide
                                                                                                                                                                                                                                                                       AAZ51378;
                                                                                                                                                                                                            AAZ513
```

ï

Gaps

30;

```
334
                                                                                                                                                                                                                                                                               202 GGCCTGCCACGTGCGTGGAGGGAAACACATGTGTTTTCTGCTACTTCAAGTGTCCCAAAGC 261
                                                                                                                                                                                                                                                                                                                                                                                              CGAAAAGCTTGCTCAAGACAAACTTAAAGCCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                           -----GCTCAAGACAAAGTTAATGC 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence encodes a protein of the invention, comprising the mature proteins of the plant defensins, the Dahlia antimicrobial protein (AMP) I and the antifungal protein 2 (AFP2), linked by a linker propeptide of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce proteins in plants. The linker propeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Antimicrobial protein; AMP1; transgenic plant; linker propeptide;
protein expression; plant defensin; RSAFP2; antifungal protein; AFP2; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ğ
acatratica ca a construction de la construction de 
                                                                                                                                                                                                                                      275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Improving expression of polyproteins in plants involves coexpression two or more proteins in plants within a single transcription unit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAAAAGCTTGACCGTGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGAGCTTGACCGTGATGCCAAGAAAGTGATTCCGAACGTTGAACATCCG 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ray JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= a
/product= "fusion protein of DmAMP1 and RsAFP2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              De Bolle MFC, Evans IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA encoding a fusion protein of DmAMP1 and RSAFP2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers 3. .476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Fig 28; 151pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Broekaert WF, Francois IEJA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-GB002716.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98GB-00018001
98GB-00026753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ99333 standard; DNA; 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-JUL-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGAAAAGCTT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-246564/21.
P-PSDB; AAY84066.
```

δ 셤 ò g ð 셤

```
The present sequence encodes a protein of the invention, comprising the mature proteins of the plant defensins, the Dahlia antimicrobial protein (AMP) I and the antifungal protein 2 (APP2). Innked by a linker propeptide of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce proteins in plants. The linker propeptide comprising a cleavage site, whereby the expressed polyprotein is post-translationally processed into the component protein molecules. The propeptide sequence is rich in amino acids A, V, S and T and contains dispetidic sequences consisting of either two acidic, two basic or one confidence and one basic residue as a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAGCTAGCAAGACGTGGTCGGCCAA 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Antimicrobial protein, AMP1, transgenic plant; linker propeptide;
protein expression; plant defensin; RsAFP2; antifungal protein; AFP2; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA encoding a fusion protein of DMAMP1, RSAFP2, HSAFP1 and AceAMP1.
                                                                                                                                                                                                                                                                                                                                                                                              Score 172.2; DB 3; Length 446;
Pred. No. 2.7e-37;
0; Mismatches 13; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product= "fusion protein of plant defensins"
                                                                                                                                                                                                                                                                                                                                                     Sequence 446 BP; 111 A; 102 C; 123 G; 110 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                     13; Indels
                                       Disclosure, Fig 24; 151pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
3. .1085
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ99334 standard; DNA; 1093 BP
                                                                                                                                                                                                                                                                                                                                                                                            38.6%;
93.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98GB-00018001.
98GB-00026753.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-GB002716.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         335 CGAAAAGCTTGCT 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGACGAGGTGGCT 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 93.3
Matches 180; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (ZENE ) ZENECA LID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dahlia merckii.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200011175-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .7-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-MAR-2000.
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAZ99334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ99334
                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                          155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                             AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACGTGGTCGGGCAA 124
                                                                                                                                                                                                                                                                                                    CTGTGGCCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                            AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                  CGAAAAGCTTGCTCAAGACAAACTTAAAG---CCGAACAACTCGCTCAAGACAAACTTAA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245 TGAGGAAGCTGCTGCTATTCCTGAAGCTTCTGAAGAACTTGCTCAAGAAGAAGCTCC 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Antimicrobial protein; AMP1; transgenic plant; linker propeptide;
protein expression; plant defensin; ReAFP2; antifungal protein; AFP2; ss.
comprising a cleavage site, whereby the expressed polyprotein is post-translationally processed into the component protein molecules. The propeptide sequence is rich in amino acids A, V, S and T and contains dipeptidic sequences consisting of either two acidic, two basic or one acidic and one basic residue as a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Improving expression of polyproteins in plants involves coexpression of two or more proteins in plants within a single transcription unit.
                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                   3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag= a
/product= "fusion protein of DmAMP1 and RsAFP2"
                                                                                                                                                        Score 173.2; DB 3; Length 485;
Pred. No. 1.5e-37;
0; Mismatches 33; Indels 3
                                                                                                             Sequence 485 BP; 124 A; 107 C; 128 G; 126 T; 0 U; 0 Other;
                                                                                                                                                                                               33; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Evans IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA encoding a fusion protein of DmAMP1 and RSAFP2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          De Bolle MFC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP.
                                                                                                                                                        38.8%;
85.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Broekaert WF, Francois IEJA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-GB002716.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98GB-00018001
98GB-00026753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAZ99329 standard; DNA; 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                       Matches 206; Conservative
                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000-246564/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (ZENE ) ZENECA LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-246564/
P-PSDB; AAY84062.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic.
Dahlia merckii.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TG 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200011175-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Antimicrobial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-AUG-1998;
04-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-MAR-2000
                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                               65
                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                   335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAZ99329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                305
```

AAZ99329

THE STATE OF THE S

g

8

ઠે

214

ö

```
misc_feature
                                                                                                                                          18-AUG-1998;
04-DEC-1998;
                                                                                                                17-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA54387;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
AAA54387
 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BXHXHXB
                                                                                                                                   The present sequence encodes a protein of the invention, comprising the mature proteins of the plant defensins, the Dahlia antimicrobial protein (AMP) 1, antifungal protein 2 (RaAP2), HaAPP1, and AceAMP1, linked by linker propeptides of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce protein sin plants. The linker propeptide comprising a cleavage site, whereby the expressed polyprotein is post-translationally processed into the component protein molecules. The propeptide sequence is rich in amino acide A, V, S and T and contains dipeptidic sequences consisting of either two acidic, two basic or one acidic and one basic residue as a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                274
                                                                                                                                                                                                                                                                                                                                                                                                                                  125 CTGTGGCAACACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGGTTCACGG 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   335 CGAAAAGCTTGCTCAAGACAAACTTAAAG---CCGAACAACTCGCTCAAGACAAACTTAA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 245 TGAGGAAGCTGCTGCTGCTGTTCTGAAGCTTCTGAAGAACTTGCTCAAGAAGAAGCTCC 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Antimicrobial protein; AMP1; transgenic plant; linker propeptide; protein expression; plant defensin; RsAFP2; antifungal protein; AFP2; ss.
                                                                          Improving expression of polyproteins in plants involves coexpression of
two or more proteins in plants within a single transcription unit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185 AGCGGGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAACTGCGCTAACGC
                                                                                                                                                                                                                                                                                                                                                                                                              155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                       Gaps
              Evans IJ, Ray JA;
                                                                                                                                                                                                                                                                                                                                                                                       .
.
                                                                                                                                                                                                                                                                                                                                                          Length 1093;
                                                                                                                                                                                                                                                                                                                                    Sequence 1093 BP; 278 A; 271 C; 287 G; 257 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                     35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA encoding a fusion protein of DmAMP1 and RSAFP2.
                                                                                                                                                                                                                                                                                                                                                            Score 170; DB 3;
Pred. No. 1.5e-36;
0; Mismatches 35;
              De Bolle MFC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                               Disclosure, Fig 29, 151pp, English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAZ99324 standard; DNA; 522 BP.
              Broekaert WF, Francois IEJA,
                                                                                                                                                                                                                                                                                                                                                             38.1%;
84.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   160. .309
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-JUL-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                     204; Conservative
                                     WPI; 2000-246564/21.
                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 204; Conserva
                                                  P-PSDB; AAY84067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synthetic.
Dahlia merckii.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAZ99324;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA29932
ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
```

```
138 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGAGGAGGAGGAGGTCGGGCAA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence encodes a protein of the invention, comprising the mature proteins of the plant defensing, the Dahlia antimicrobial protein (AMP) I and the antifungal protein 2 (APP2), linked by a linker propertide of the invention. The specification describes methods for propertide of the invention. The specification describes methods for improving expression levels of one or more proteins in a transgenic plant. The method comprises inserting a DNA sequence having a promoter region operably linked to two or more protein encoding regions separated by a DNA sequence coding for a linker propeptide and a terminator region. The method is used to produce proteins in plants. The linker propeptide comprising a cleavage site, whereby the expressed polyprotein is post-translationally processed into the component protein molecules. The propeptide sequence is rich in amino acide A, v, s and T and contains dipeptidic sequences consisting of either two acidic, two basic or one acidic and one basic residue as a cleavable linker sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTTCCAACGC 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Improving expression of polyproteins in plants involves coexpression of two or more proteins in plants within a single transcription unit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTGGCAACACGGGACATTGTGACAATGTAAATCATGGGAGGGTGCGGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ray JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 522 BP; 147 A; 119 C; 127 G; 129 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                De Bolle MFC, Evans IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 169.2; DB 3
Pred. No. 1.9e-36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
/note= "encodes DmAMP1"
358. .510
                                                                          /*tag= b
/note= "encodes RsAFP2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 2; Fig 8; 151pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAA54387 standard; DNA; 460 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plant defensin coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Broekaert WF, Francois IEJA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37.9%;
95.6%;
                                                                                                                                                                                                                                                                                                                         99WO-GB002716
                                                                                                                                                                                                                                                                                                                                                                                             98GB-00018001
98GB-00026753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 174; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-246564/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ZENE ) ZENECA LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; AAY84057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CG 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TG 319
                                                                                                                                                                               WO200011175-A1
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAATCGCGACTGTGAGAGTGCACTATGTGAGAAAGCTAGCAAGACATGGTCAGGCAA 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       207 TGCGTGTCATGTGCGTGGTGAAAAAAACATGTGCTTCTGCTACTTCAATTGTAAAGAAGC 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleotides encoding plant defensins can be used to create transgenic plants in which plant defensin polypeptides are present at higher or lower levels than normal, or in cell types or devalopmental stages in which they are not normally found. This has the effect of altering the level of disease (e.g. fungal) resistance and stress tolerance in those cells. The defensin polypeptides are useful for immunising animals to produce polyclonal or monoclonal antibodies. These antibodies are useful for screening cDNA expression libraries to isolate full-length plant defensin cDNA clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAAAAGCTTGCCCAAGACAAGCTCAACGCTGAAAATTCGGCCGTGATGACGTTAAAG 325
                                                                                                                                                                                                                                                                                                                                                                                                                               Isolated polynucleotides encoding plant defensins, useful for creating transgenic plants with higher or lower levels of defensin polypeptides, especially for increasing disease (e.g. fungal) resistance and stress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
               Defensin; disease; fungus; resistance; transgenic plant; vaccine; immunisation; antibody; crop protection; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 460 BP; 160 A; 83 C; 102 G; 115 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37.8%; Score 168.6; DB 5
81.6%; Pred. No. 2.6e-36;
iive 0; Mismatches 44
                                                                                              Location/Qualifiers
25. .351
/*tag= a
/product= "Plant defensin"
                                                                                                                                                                                                                                                                                                                   H
                                                                                                                                                                                                                                                                                                               (DUPO ) DU PONT DE NEMOURS & CO E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 2; Page 37; 50pp; English
                                                                                                                                                                                                                                                03-MAY-2000; 2000WO-US011952.
                                                                                                                                                                                                                                                                                99US-0133039P.
                                                                                                                                                                                                                                                                                                                                                  Miao G, Weng Z, Famodu OO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 195; Conservative
                                                               Dimorphotheca sinuata.
                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-024871/03.
P-PSDB; AAB04046.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                WO200068405-A2
                                                                                                                                                                                                                                                                                07-MAY-1999;
                                                                                                                                                                                                                 16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tolerance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                Key
ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

Search completed: March 18, 2005, 13:52:15 Job time : 388 secs

```
March 18, 2005, 12:55:37 ; Search time 136 Seconds (without alignments) 5366.025 Million cell updates/sec
                                                                                                                                                                                                                                                                              1 atggtgaatcggtcggttgc......ttccaaacgttgaacatccg 446
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                         IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                US-09-763-019-5
                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                     Run on:
```

Listing first 45 summaries Post-processing: Minimum Match 0% Maximum Match 100%

/cgn2\_6/ptodata/1/ina/5A\_COMB.seq:\*
/cgn2\_6/ptodata/1/ina/5B\_COMB.seq:\*
/cgn2\_6/ptodata/1/ina/6A\_COMB.seq:\*
/cgn2\_6/ptodata/1/ina/BCOMB.seq:\*
/cgn2\_6/ptodata/1/ina/PCTUS\_COMB.seq:/cgn2\_6/ptodata/1/ina/PCTUS\_COMB.seq:/ Issued\_Patents\_NA:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		d			SUMMARIES	
Result No.	Score	Query Match	Length	DB	QΙ	Description
п	154.2	34.6	5 565	4	US-09-589-733C-6	Sequence 6, Appli
~	99.4	22.3			US-08-377-687-31	Sequence 31, Appl
ო	99.4	22.3		Н	US-08-777-192-31	31,
4	99.4	22.3	3 150	ო	US-08-971-982-31	Sequence 31, Appl
5	91.4	20.5		Н	US-08-377-687-33	33,
9	91.4	20.5		н	US-08-777-192-33	Sequence 33, Appl
7.	91.4	20.5	5 150	٣	US-08-971-982-33	33,
80	96.6	19.4		-	US-08-377-687-34	34,
თ	96.6	19.4		-	US-08-777-192-34	34,
10	96.6	19.4	150	m	US-08-971-982-34	34,
11	58.4	13.1	147	-	US-08-377-687-36	36,
12	58.4	13.1	147	-	US-08-777-192-36	36,
13	58.4	13.1		ო	US-08-971-982-36	Sequence 36, Appl
14	44.6	10.0		7	US-08-627-706-14	14,
15	44.6	10.0		ო	US-09-103-489-14	Sequence 14, Appl
16	44.6	10.0		4	US-09-829-381D-14	14,
17	44.6	10.0	286	н	US-08-627-706-12	Sequence 12, Appl
18	44.6	10.0		m	US-09-103-489-12	15
19	44.6	10.0	286	4	US-09-829-381D-12	12,
20	40.8	9.1		Н	US-08-627-706-9	6
21	0	9.	1 500	m	US-09-103-489-9	6
22	40.8	9.	1 500	4	US-09-829-381D-9	6
23	40	9.	414	٦	US-08-377-687-48	48,
24	40	9.	414	٦	US-08-777-192-48	48,
25	40	9.	414	ო	US-08-971-982-48	48,
56	40	9.	414	m	US-09-077-951-19	19,
27	40	9.	414	4	US-09-077-948A-45	45,

Sequence 58, Appl	Sequence 58, Appl	Sequence 58, Appl	Sequence 32, Appl	Sequence 14, Appl	Sequence 9, Appli	Sequence 32, Appl	Sequence 32, Appl	32,	Sequence 22, Appl	Sequence 154963,	Sequence 178474,	Sequence 3330, Ap	Sequence 18612, A	Sequence 16859, A	Sequence 16073, A	Sequence 17101, A	Sequence 11789, A
US-08-377-687-58	US-08-777-192-58	US-08-971-982-58	US-09-589-733C-32	US-08-232-463-14	US-09-589-733C-9	US-08-377-687-32	US-08-777-192-32	US-08-971-982-32	US-09-806-708B-22	US-09-949-016-154963	US-09-949-016-178474	US-09-270-767-3330	US-09-270-767-18612	US-09-949-016-16859	US-09-949-016-16073	US-09-949-016-17101	US-09-949-016-11789
+	-	m	4	7	4	ч	Н	m	4	4	4	4	4	4	4	4	4
288	288	288	112	7218	1346	9	9	9	1141	601	601	942	942	99830	385136	51835	52032
8.7	8.7	8.7	8.7	8.7	9.6	9.6	9.6	9.8	8.4	7.9	7.9	7.9	7.9	7.9	7.9	7.8	7.8
39	39	39	38.8	38.6	38.4	38.2	38.2	38.2	37.4	35.2	35.2	35.2	35.2	35.2	35.2	35	35
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
			υ	υ						U	U	U	υ	υ	υ		

## ALIGNMENTS

2405568

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

1202784 segs, 818138359 residues

Searched:

```
99 AGABATCGGATCGGTGABAGGAGAATTATGTGAGAAGGCAAGCCAGACATGGTCCGGAAC 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159 ATGTGGCAAGACAAAACACTGTGATGACCCAGTGCAAGTCTTGGGAGGGTGCAGGCCCATGG 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 565;
                                                                          JOURGALL INCOMMITION:
JAPPLICANT: Crasta, Oswald R.
JAPPLICANT: Crasta, Oswald R.
JAPPLICANT: Duvick, Jon
JAPPLICANT: Duvick, Jon
JAPPLICANT: Lu, Guihua
JAPPLICANT: Sunflower Anti-Pathogenic Proteins and
JAPPLICANT: Sunflower Anti-Pathogenic Proteins and
JAPPLICANT: Sunflower Anti-Pathogenic Proteins and
JAPPLICANTON NUMBER: US/09/589,733C
JURRENT APPLICATION NUMBER: US/0140,646
PRIOR FILING DATE: 1999-06-23
PRIOR FILING DATE: 1999-11-01
JUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 154.2; DB 4
Pred. No. 8.6e-38;
0; Mismatches 56
US-09-589-733C-6; Sequence 6, Application US/09589733C; Patent No. 6677503; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: DNA
; ORGANISM: Helianthus annuus
US-09-589-733C-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 76.5
Matches 189; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAAAAG 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAAAAG 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

ö

```
CLASSIPTOATION:
PRIOR APPLICATION INTA:
APPLICATION NUMBER:
SPILING DATE: 04-JAN-1993
ATTORNEY/AGENT INFORMATION:
NAME: KOKULIS, PAUL N.
REGITATION NUMBER: 16,773
REFERENCE/DOCKET NUMBER: 99042/SEE.36525/US/A
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEFAX: 202-861-3000
TELEFAX: 202-861-3000
                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/777,192
                                       APPLICANT: REES, SARAH B.
APPLICANT: TEREAS, FRANKY R.G.
APPLICANT: VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN
STREET: 1100 NEW YORK AVENUE, N.W.
CITY: WASHINGTON
                      OSBORN, RUPERT W.
REES, SARAH B.
TERRAS, FRANKY R.G.
CAMMUE, BRUNO P.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : 150 base pairs
nucleic acid
BDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
Matches 118, Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE
                                                                                                                                                                                                                                                                                                         ZIP: 20005
                                                                                                                                                                                                                                                               STATE: D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-777-192-31
  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGIH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237 GACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177 GAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGT 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 GATAACCAATGCAAGTCTTGGGAGGGAGCTGCTCATGGAGCTTGCCATGTTAGAACGGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GAGCTTTGCGAGAAGGCTTCTAAGACTTGGTCTGGAAACTGCGGAAACACTGGACATTGC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22.3%; Score 99.4; DB 1; Length 150; 79.2%; Pred. No. 4.6e-21; tive 0; Mismatches 31; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
CLASSIFICATION: 800
PCLASSIFICATION BOO
PCLASSIFICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-JAN-1993
ATTORNEY/ARDIT INFORMATION:
NAME: KOKULIS, PAUL N.
REFERENCE/DOCKET UNMBER: 16,773
TELECOMUNICATION NUMBER: 99042/SEE.36525/US/A
TELECOMUNICATION INFORMATION:
TELECOMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZONIATION CONTROLL CONTROLL CONTROLL CONTROLL COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/377,687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 AAGCATATGTGCTTCTGCTACTTCAACTG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      297 AAACACATGTGTTTCTGTTACTTCAATTG 325
                                                                                                                                               APPLICANT: BROEKAERT, WILLEM F.
APPLICANT: BROEKAERT, WILLEM F.
APPLICANT: CAMMUE, BRUND P.A.
APPLICANT: CSBCRN, RUPERT W.
APPLICANT: REES, SARAH B.
APPLICANT: TERRAS, FRANKY R.G.
APPLICANT: TERRAS, FRANKY R.G.
APPLICANT: VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN
CITY: MASHINGTON
STATE: D.C.
COUNTRY: USA
                                                                                      Sequence 31, Application US/08377687
Patent No. 5538525
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 31:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 150 base pairs
TYPE: nucleic acid
STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 79.2
Matches 118; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: linear
MOLECULE TYPE: CDNA
US-08-377-687-31
                                                                  US-08-377-687-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
```

```
236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         237 GACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTATGTGCGTAACGGG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 GATAACCAATGCAAGTCTTGGGAGGGAGCTGCTCATGGAGCTTGCCATGTTAGAAACGGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177 GAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22.3%; Score 99.4; DB 1; Length 150; ilarity 79.2%; Pred. No. 4.6e-21; Conservative 0; Mismatches 31; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   297 AAACACATGTTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 AAGCATATGTGCTTCTGCTACTTCAACTG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TERRAS, FRANKY R.G.
VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 4
(18-08-971-982-31)
(18-08-971-982-31)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-971-982)
(18-08-982)
(18-08-982)
(18-08-982)
(18-08-982)
(18-08-982)
(18-08-982)
(18-08-982)
(18-08-982)
TELEFAX: 202-822-0944
INFORMATION FOR SEQ ID NO: 31:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REES, SARAH B.
```

US-08-777-192-31

Sequence 31, Application US/08777192

PATENT No. S824669

GENERAL INFORMATION:
APPLICANT: BROEKAERT, WILLEM F.

us-09-763-019-5.rni

```
LENGTH: 150 base pairs
TYPE: nucleic acid
STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 75.8
Matches 113; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: CDNA US-08-377-687-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: WASHINGTON
STATE: D.C.
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-777-192-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 GATAACCAATGCAAGTCTTGGGAGGAGCTGCTCATGGAGCTTGCCATGTTAGAAACGGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         177 GAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGT 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         237 GACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 22.3%; Score 99.4; DB 3; Length 150; Best Local Similarity 79.2%; Pred. No. 4.6e-21; Matches 118; Conservative 0; Mismatches 31; Indels (
                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILING DATE: 17-NO. 6187904-1997
CLASSIFICATION: JUNKNOWN>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-JAN-1993
ATTORNEY/AGENT INFORMATION:
NAMME: KOKULIS, PAUL N.
REGISTRATION NUMBER: 16,773
TERERCE/DOCKET NUMBER: 99042/SEE.36525/US/A
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           297 AAACACATGTTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: BROEKAERT, WILLEM F.
APPLICANT: CAMMIE, BRONO P.A.
APPLICANT: CAMMIE, BRONO P.A.
APPLICANT: OSBORN, RUPERT W.
APPLICANT: TERES, SARMH B.
APPLICANT: TERRAS, FRANKY R.G.
APPLICANT: VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: nucleic acid
STRANDEDNESS: both
TOPOLOGY: linear
MOLECTLE TYPE: CDNA
SEQUENCE DESCRIPTION: SEQ ID NO: 31:
ADDRESSEE: CUSHMAN DARBY & CL
STREET: 1100 NEW YORK AVENUE,
CITY: WASHINGTON
STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1100 NEW YORK AVENUE, N.W. CITY: WASHINGTON STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CUSHMAN DARBY & CUSHMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 33, Application US/08377687
Patent No. 5538525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 202-822-0944
INFORMATION FOR SEQ ID NO: 31:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 20005
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-971-982-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-377-687-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
177 GAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGT 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         237 GACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 GATGATCAATGCAAGTCTTGGGAGGGAGCTGCTCATGGAGCTTGCCATGTTAGAAACGGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 cagerrreceacada escricra a contra c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36; Indels
                                                                                           CURRENT APPLICATION DATA:

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/377,687

FILING DATE:

CLASSIFICATION: 800

PRIOR APPLICATION 300

FILING APPLICATION 1993

ATTORNEY/AGENT INFORMATION:

NAME: KOKULIS, PAUL N.

REGISTRATION NUMBER: : 99042/SEE.36525/US/A

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PC_DOS/MS_DOS SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: US/08/777 107 FILING COMMER: US/08/777 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20.5%; Score 91.4; DB 1;
75.8%; Pred. No. 1.4e-18;
tive 0; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 297 AAACACATGTGTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 AAGCATATGTGCTTCTGCTACTTCAACTG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: BROEKABRT, WILLEM F.
APPLICANT: CAMMUE, BRUNO P.A.
APPLICANT: OSBORN, RUBERT W.
APPLICANT: REES, SARAH B.
APPLICANT: TERRAS, FRANKY R.G.
APPLICANT: VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
TITLE OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 1100 NEW YORK AVENUE, N.W.
COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 33, Application US/0877192; Patent No. 5824869; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 202-822-0944
INFORMATION FOR SEQ ID NO: 33:
SEQUENCE CHARACTERISTICS:
LENGTH: 150 base pairs
```

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                            US-08-971-982-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-377-687-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 177 GAACTAIGCGAGAAAGCIAGCAAGACAIGGICGGGAAACIGIGGCAAIACGGGACAIIGI 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237 GACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 GATGATCAATGCAAGTCTTGGAAGGAGCTGCTCATGGAGCTTGCCATGTTAGAAACGGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GAGCTTTGCGAGAGGCTTCTAAGACTTGGTCTGGAAACTGCGGAAACACTAAGCATTGC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                               Score 91.4; DB 1; Length 150;
Pred. No. 1.4e-18;
0; Mismatches 36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: KOKULIS, PAUL N.
REGISTRATION VUMBER: 16,773
REFERENCE/DOCKET NUMBER: 99042/SEE.36525/US/A
TELECOMMUNICATION INFORMATION.
                  APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-5AN-1993
ATTORNEY AGENT INFORMATION:
NAME: KOKULIS, PAUL N.
REGISTRATION NUMBER: 16,773
REFERENCE/DOCKET NUMBER: 99042/SEE.36525/US/A
TELECOMMUNICATION INFORMATION:
TELEFONE: 202-861-3000
TELEFAX: 202-82-0944
INFORMATION FOR SEQ ID NO: 33:
SEQUENCE CHARACTERISTICS:
LENGTH: 150 base pairs
TYPE: nucleic acid
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1100 NEW YORK AVENUE, N.W. CITY: WASHINGTON STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         297 AAACACATGTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 AAGCATATGTGCTTCTGCTACTTCAACTG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-JAN-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/971,982
FILING DATE: 17-No. 6187904-1997
CLASSIFICATION: <un>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REES, SARAH B.
TERRAS, FRANKY R.G.
VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 33, Application US/08971982
Patent No. 6187904
GENERAL INFORMATION:
APPLICANT: BROEKAERT, WILLEM F.
CAMMUE, BRUNO P.A.
OSBORN, RUPERT W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 20.5%;
Best Local Similarity 75.8%;
Matches 113; Conservative
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear
MOLECULE TYPE: CDNA
US-08-777-192-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-971-982-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
```

```
237 GACAACCAATGTAAATCATGGGAGGGTGCGCCCATGGAGCGTGTCATGTGCGTAACGGG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 GATGATCAATGCAAGTCTTGGGAGGGAGCTGCTCATGAGCTTGCCATGTTAGAAACGGA 120
                                                                                                                                                                                                                                                                                                                                                                     177 GAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAAACTGTGGCAATACGGGACATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                       1 dagcirridedadadecrireradaderridereradaderidedadaderadedarride
                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                              ..
0
                                                                                                                                                                                                                                                                               Length 150;
                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SISTEM: r-LUCS/ms-LUCS
SOFTWARE Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILING DATE:
CLASSIFICATION NUMBER: US/08/377,687
FILING DATE:
CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-JAN-1993
ATTORNEY/AGENT INFORMATION:
NAME: KOKULIS, PAUL N.
REGISTRATION NUMBER: 99042/SEE.36525/US/A
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEPHONE: 202-861-3000
TELEPHONE: 202-861-3000
TELEPHONE: ASO ID NO: 34:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                     Score 91.4; DB 3;
Pred. No. 1.4e-18;
0; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         297 AAACACAIGIGITICIGITACIICAATIG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 AAGCATATGTGCTTCTGCTACTTCAACTG 149
                                                                                                                                            TOPOLOGY: linear
MOLECULE TYPE: cDNA
SEQUENCE DESCRIPTION: SEQ ID NO: 33:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: BROEKAERT, WILLEM F.
APPLICANT: CAMMUE, BRUNO P.A.
APPLICANT: OSBORN, RUPERT W.
APPLICANT: REES, SARAH B.
APPLICANT: TERRAS, FRANKY R.G.
APPLICANT: VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1100 NEW YORK AVENUE, N.W. CITY: WASHINGTON STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 34, Application US/08377687; Patent No. 5538525; GENERAL INFORMATION:
                                                                 LENGTH: 150 base pairs
TYPE: nucleic acid
STRANDEDNESS: both
TELEFAX: 202-822-0944
INFORMATION FOR SEQ ID NO: 33:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                       20.5%;
                                                                                                                                                                                                                                                                                                                    Matches 113; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 150 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: nucleic
STRANDEDNESS:
```

```
237 GACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGG 296
                                                                                                                      237 GACAACCAAIGTAAATCAIGGGAGGGIGCGGCCCAIGGAGCGIGICAIGIGCGIAACGGG 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GAGCTTTGCGAGAAGGCTTCTAAGACTTGGTCTGGAAACTGCGGAAACACTAAGCATTGC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            177 GAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177 GAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER TEACHALDE FORM;

WEDIUM TYPE: FORM;

COMPUTER: IBM PC compatible

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

COFFWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/971,982

FILING DATE: 17-NO. 6187904-1997

CLASSIPTCATION TOWARE: US 08/002,480

FILING DATE: 04-JAN-1993

ATTORNEY/AGENT INFORMATION:

NAME: KOKULIS, PAUL N.

REGISTRATION NUMBER: 16,773

REGISTRATION NUMBER: 16,773

REFERENCE/DOCKET NUMBER: 99042/SEE.36525/US/A

TELECOMMUNICATION: NOT. 2007.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19.4%; Score 86.6; DB 3; 73.8%; Pred. No. 4.3e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1100 NEW YORK AVENUE, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                   121 AAGCATATGTGCTTCTGCTACTTCAACTG 149
                                                                                                                                                                                  297 AAACACATGTTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                               REES, SARAH B.
TERRAS, FRANKY R.G.
VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear

MOLECULE TYPE: CDNA

SEQUENCE DESCRIPTION: SEQ ID NO: 34:
US-08-971-982-34
                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: BROEKAERT, WILLEM F.
                                                                                                                                                                                                                                                                                                                                       Sequence 34, Application US/08971982 Patent No. 6187904 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                          CAMMUE, BRUNO P.A. OSBORN, RUPERT W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 150 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 202-822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 73.8
Matches 110; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: USA
ZIP: 20005
                                                                                                                                                                                                                                                                                             RESULT 10
US-08-971-982-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query, Match
                                         g
                                                                                          ò
                                                                                                                             q
                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                              177 GAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGT 236
                                                                                                                                                                                                                                                                      237 GACAACCAATGTAAATCATGGGAGGGTGCGCCCATGGAGCGTGTCATGTGCGTAACGGG 296
                                                                                                                                                                                                                                                                                                      61 GATAACAAGTGCAAGTCTTGGGAGGGAGCTGCTCATGAGCTTGCCATGTTAGATCTGGA 120
                                                                                                                                                                                                            1 GAGCTTTGCGAGAAGGCTTCTAAGACTTGGTCTGGAAACTGCGGAAACACTTAAGCATTGC 60
                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                        19.4%; Score 86.6; DB 1; Length 150; 73.8%; Pred. No. 4.3e-17; ive 0; Mismatches 39; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 19.4%; Score 86.6; DB 1; Length 150; Best Local Similarity 73.8%; Pred. No. 4.3e-17; Matches 110; Conservative 0; Mismatches 39; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/777,192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99042/SEE.36525/US/A
                                                                                                                                                                                                                                                                                                                                                                                                     121 AAGCATATGTGCTTCTGCTACTTCAACTG 149
                                                                                                                                                                                                                                                                                                                                                            297 AAACACATGTGTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: BROEKAERT, WILLEM F.
APPLICANT: CAMMUB, BRUNO P.A.
APPLICANT: OSBORN, RUBERT W.
APPLICANT: REES, SARAH B.
APPLICANT: REES, SARAH B.
APPLICANT: VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BICCIDAL PROTEINS
TITLE OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1100 NEW YORK AVENUE, N.W. CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-JAN-193
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 34, Application US/08777192
Patent No. 5824869
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER: 16,773
REGISTRATION NUMBER: 16,773
REPRENCE/DOCKET NUMBER: 99042
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEPHONE: 202-861-3000
INFORMATION FOR SEQ ID NO: 34:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 2005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                        Query Match
Best Local Similarity 73.8 Matches 110; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      150 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: both
; TOPOLOGY: linear; MOLECULE TYPE: cDNA US-08-377-687-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-777-192-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-777-192-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: V
STATE:
                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                   셤
```

```
GENERAL INFORMATION
GENERAL INFORMATION
APPLICANT: CAMMUE, BRUNG P.A.
APPLICANT: CAMMUE, BRUNG P.A.
APPLICANT: CASORN, RUPERT W.
APPLICANT: REES, SARAH B.
APPLICANT: REES, SARAH B.
APPLICANT: VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                   STREET: 1100 NEW YORK AVENUE, N.W. CITY: WASHINGTON STATE: D.C.
; Sequence 36, Application US/08777192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , MOLECULE TYPE: CDNA US-08-777-192-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                       STATE: D.C.
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                               20002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-971-982-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178 AACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             238 ACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGGA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62 ATACTCAATGCAGAAACTGGGAGTCTGCTAAGCATGGAGCTTGCCATAAG---AGAGGAA 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 ACCITIGCGAGAGGAGCITCICITIACITIGGAACIGGGAAACACIGGGAAACACIGGACAACACITGGACAATIGCG 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13.1%; Score 58.4; DB 1; Length 147; 66.9%; Pred. No. 2.5e-08; cive 0; Mismatches 46; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-JAN-1993
ATTORNEY/ABENT INFORMATION:
NAME: KOKULIS, PAUL N.
REGISTRATION NUMBER: 16,773
FREFERENCE/DOCKET NUMBER: 99042/SEE.36525/US/A
TELECOMMUNICATION INFORMATION:
TELECHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/377,687
FILING DATE:
                 297 AAACACATGTGTTTCTGTTACTTCAATTG 325
                                       119 ACTGGAAGTGCTTCTGCTACTTCGATTG 146
                                                                                                                                                                                                                   APPLICANT: BROEKGERT, WILLEW F.
APPLICANT: CAMMUE, BRUNO P.A.
APPLICANT: CSBORN, RUPERT W.
APPLICANT: REES, SARAH B.
APPLICANT: RERS, SARAH B.
APPLICANT: TERRAS, FRANKY R.G.
APPLICANT: VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1100 NEW YORK AVENUE, N.W.
CITY: D.C.
CONDITY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  298 AACACATGTGTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 20005
COMPUTER REALABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                         Sequence 36, Application US/08377687
Patent No. 5538525
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPAX: 202-822-0944
INFORMATION FOR SEQ ID NO: 36:
SEQUENCE CHARACTERICSTICS:
LENGTH: 147 base pairs
TYPE: nucleic acid
STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 66.9
Matches 99; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear MOLECULE TYPE: cDNA
                                                                                                                     RESULT 11
US-08-377-687-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-377-687-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
               ઠે
```

```
62 ATACTCAATGCAGAAACTGGGAGTCTGCTAAGCATGGAGCTTGCCATAAG---AGAGGAA 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 accirridodadadaderrorractridadoredadaderecedadaderecedaderece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  238 ACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178 AACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
13.1%; Score 58.4; DB 1; Length 147;
Best Local Similarity 66.9%; Pred. No. 2.5e-08;
Matches 99; Conservative 0; Mismatches 46; Indels
                                                                                                                                                                                      APPLICATION:
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-10A-1993
ATTORNEY/AGENT INFORMATION:
NAME: KOKULIS, PAUL N.
RESISTRATION NUMBER: 16,773
REFERENCE/DOCKET NUMBER: 99042/SEE.36525/US/A
FELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEPHONE: 202-861-3000
TELEPHONE: 202-861-3000
TELEPHONE: 202-861-3000
TELEPHONE: 147 base pairs
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
TURNEY: NUCleic acid
                                                                                                                     SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/777,192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298 AACACATGTGTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119 ACTGGAAGTGCTTCTGCTACTTCGATTG 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 36, Application US/08971982;
Patent No. 6187904;
GENERAL INFORMATION:
APPLICANT: BROEKAERT, WILLEM F.
OSBORN, RUPERT W.
REES, SARAH B.
TERRAS, FRANKY R.G.
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
```

RESULT 12 US-08-777-192-36

```
95 chargergaarechagerrerecangaaccangregaachargerengangrerengen 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             223 ATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGGGTGTC 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155 ACAACAATGCATGCAGGAACCAATGCAGAAACCTTGAAAGAGCAGAACACGGATCTTGCA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            163 CATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           283 ATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCCAATTGTAAAAAG 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         215 ACTATGTCTTCCCAGCTCACAATGTATTTGTTACTTCCCATGTTAATAAG 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Liang, Jihong
APPLICANT: Shah, Dilip M.
APPLICANT: Shah, Dilip M.
APPLICANT: Wonnie S.
APPLICANT: Rosenberger. Clindy A.
TITLE OF INVENTION: Antifungal Polypeptide and Methods for TITLE OF INVENTION: Controlling Plant Pathogenic Fungi NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: Charles E. Cohen, Monsanto Company, BB4F
STREET: 700 Chesterfield Village Parkway No. 6215048th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPTER: Floppy disk
COMPTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/103,489
FILING DATE: 24-UUN-1998
CLASSIFICATION: 800
                                                  COMPUTER: READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/627,706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10.0%; Score 44.6; DB 1;
53.8%; Pred. No. 0.00065;
iive 0; Mismatches 79;
                                                                                                                                                                                                                                                                                                                                                       38-21 (10700) A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 14, Application US/09103489; Patent No. 6215048; GENERAL INFORMATION:
                                                                                                                                                                                                                                                 CLASSIFICATION: 436
ATTORNEY/AGENT INFORMATION:
NAME: Ochen, Charles E.
REGISTRATION NUMBER: 34,565
REFERENCE/DOCKET NUMBER: 38-2:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: (314)537-6224
TELEPAX: (314)537-604
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : 270 base pairs
nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 53.8
Matches 92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: St. Louis
STATE: Missouri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-103-489-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-627-706-14
            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            178 AACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          238 ACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAACGGGA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62 ATACTCAATGCAGAACTGGGAGTCTGCTAAGCATGGAGCTTGCCATAAG---AGAGGAA 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 accirridedadadecireterractionactionandecidedanacticedanacticed 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 14, Application US/08627706

Patent No. 5773696

GENERAL INFORMATION:
APPLICANT: Liang, Jihong
APPLICANT: Shah, Dilip M.
APPLICANT: Rah, Dilip M.
APPLICANT: Rosenberger, Cindy A.
TITLE OF INVENTION: Controlling Plant Pathogenic Fungi
NUMBER OF SEQUENCES: 19
CORRESPONDENCE ADDRESS:
ADDRESSEE: Charles E. Cohen, Monsanto Company, BB4F
STREET: 700 Chesterfield Village Parkway No. 5773696th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13.1%; Score 58.4; DB 3; Length 147; 66.9%; Pred. No. 2.5e-08; tive 0; Mismatches 46; Indels
                                                                                                                                                                                                                        ZIF: 20005

COMPUTER READABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/971,982
FILING DATE: 17-NO. 6187904-1997
CLASSIFICATION: «Unknown»
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/002,480
FILING DATE: 04-2AN-1993
ATTORNEY/AGENT INFORMATION:
NAME: KOKULIS, PAUL N.
REGISTRATION NUMBER: 16,773
RESERENCE/DOCKET NUMBER: 99042/SEE.36525/US/A
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEPHONE: 202-861-3000
TELEPHONE: 202-802-0944
INFORMATION FOR SEQ ID NO: 36:
SEQUENCE CHARACTERISTICS:
VANDERLEYDEN, JOZEF
TITLE OF INVENTION: BIOCIDAL PROTEINS
NUMBER OF BEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSE: CUSHMAN DARBY & CUSHMAN
STREET: 1100 NEW YORK AVENUE, N.W.
CITY: WASHINGTON
STATE: D.C.
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119 ACTGGAAGTGCTTCTGCTACTTCGATTG 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        298 AACACATGTGTTTCTGTTACTTCAATTG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
MOLECULE TYPE: CDNA
SEQUENCE DESCRIPTION: SEQ ID NO: 36:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 147 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 66.99
Matches 99; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 700 CITY: St. Louis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-971-982-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
US-08-627-706-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
```

Gaps

us-09-763-019-5.rni

```
ö
                                                                                                                                                                                                                                                                                                                                                           163 CATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCA 222
                                                                                                                                                                                                                                                                                                                                                                                      223 ATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGGGGCCCAATGGAGCGTGTC 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         283 ATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAG 333
215 ACTATGTCTTCCCAGCTCACAAATGTATTTGTTACTTCCCATGTTAATAAG 265
                                                                                                                                                                                                                                                                                   Query Match 10.0%; Score 44.6; DB 3; Length 270; Best Local Similarity 53.8%; Pred. No. 0.00065; Matches 92; Conservative 0; Mismatches 79; Indele
REGISTRATION NUMBER: 34,565
REGISTRATION NUMBER: 34,565
REFERENCE/COCKET NUMBER: 38-21 (10700) A
TELECOMUNICATION INFORMATION:
TELEPHONE: (314) 537-6224
TELEPHONE: (314) 537-6047
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 270 base pairs
TYPE: nucleic acid
STRANDENDESS: single
MOLECULE TYPE: CDNA
US-09-103-489-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                             ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

Search completed: March 18, 2005, 16:31:56 Job time : 137 secs

Ę,

```
US-10-178-449A-48
                                                                                                                                                                                                                              March 18, 2005, 14:31:06; Search time 420 Seconds (without alignments) 6321.756 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                            US-09-763-019-5
446
1 atggtgaatcggtcggttgc......ttccaaacgttgaacatccg 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Published Applications NA:*

1: /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PCT_NEW PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/US06_NEW PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
5: /cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
6: /cgn2_6/ptodata/2/pubpna/PCTUS_PUBCOMB.seq:*
7/cgn2_6/ptodata/2/pubpna/US08_NEW PUB.seq:*
8: /cgn2_6/ptodata/2/pubpna/US08_NEW PUB.seq:*
9: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
13: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
14: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
15: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
17: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
18: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
19: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
19: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
10: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
12: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
13: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
14: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
15: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
17: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
18: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
19: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
21: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
22: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11089632
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5544816 seqs, 2976611598 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                          Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Ħ	48, Appl	31, Appl	3,	7	46,	13, Appl	6	11,	21,	17,	6, Appli
	Description	Sequence 48,	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence
SUMMARIES	ΩI	US-10-178-449A-48	US-10-178-449A-31	US-10-178-449A-3	US-10-178-449A-1	US-10-178-449A-46	US-10-178-449A-13	US-10-178-449A-9	US-10-178-449A-11	US-10-178-449A-21	US-10-178-449A-17	US-10-636-396-6
	DB	15	15	15	15	15	15	15	15	15	15	11
	* Query Match Length DB	529	579	460	503	461	457	463	603	458	460	265
	% Query Match	47.0	45.5	37.8	37.8	36.1	35.1	35.1	35.1	34.7	34.7	34.6
	Score	209.4	203	168.6	168.6	161	156.4	156.4	156.4	154.8	154.8	154.2
	Result No.	П	7	e	4	2	9	7	œ	6	10	11

Sequence 6, Appli		7	15,	Sequence 31, Appl	33,	e 25	۲,	34	34,	'n,	36,	283,	Sequence 36, Appl	е 88,	Sequence 25, Appl	27,	14,	4,	Sequence 12, Appl	Sequence 12, Appl	21,	Sequence 15, Appl	Sequence 9, Appli	Sequence 9, Appli	Sequence 2046, Ap	Sequence 2046, Ap	Sequence 48, Appl	e 19,	45,	7	m	ì	8
	5 US-10-178-449A-19	5 US-10-178-449A-23	5 US-10-178-449A-15	-759	US-09-759-584-33	5 US-10-178-449A-29	US-10-178	5 US-10-178-449A-34	US-09-759-584-34	78	5 US-10-178-449A-36	US-09-770-696-283	US-09-759-584-36	US-10-178	US-10-178-449A	15 US-10-178-449A-27	ט	7 US-10-681-972-14	US-09-829-381A-12	7 US-10-681-972-12	US-09-732-561-21	US-09-732-561-15	US-09-829-381A-9	7 US-10-681-972-9	US-09-938-842A-2046	1 US-09-938-842A-2046	US-09-759-584-48	3 US-10-006-252A-19			US-09-75	-312-841	US-09-759-584-58
Н	-	-	Н	150 9	50 9	10 1	-	Н	50	11 1	50 1	73 9	17 9					70 1	36 9	36 1	6 91	90	900	00	13 9	13 1	14 9	414 1			-	_	88
Ñ	4	4	4	ä	ä	Ö	ÿ	ä	금	Š	8	'n	Ä	4	4	ij	7	7	286	ñ	16	4	Ñ	ŭ	ñ	ñ	4	4	4	335913	33593	3673	5
34.6	34.3	34.3	31.0	22.3	20.5	19.8	19.8	19.7	19.4	19.2	16.8	14.8	13.1	12.7	10.7	10.7	10.0	10.0	10.0	10.0	9.3	9.5	9.1	9.1	9.0	9.0	9.0	9.0	9.0	8.9	8.9	8.8	8.7
154.2	153.2	153.2	138.4	99.4	91.4	88.2	88.2	87.8	96.6	85.8	74.8	65.8	58.4	9.95	47.8	47.8	44.6	44.6	44.6	44.6	41.6	41.2	40.8	40.8	40.2	40.2	40	40	40	39.6	39.6	39.5	39
12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	33	34	32	36	37	38	39	40	41	42	43	44	45

## ALIGNMENTS

US-10-179-499-48

Sequence 48, Application US/10178449A

Publication No. US20030140368A1

GENERAL INFORMATION

APPLICANT: Hermann, Rafael

APPLICANT: Hermann, Rafael

APPLICANT: Miao, Guo-Hua

APPLICANT: Miao, Guo-Hua

APPLICANT: Meng, Zude

APPLICANT: Refalski, Jan antoni

APPLICANT: Weng, Zude

TITLE OF INVENTION: Plant Defensins

TILLE OF INVENTION NUMBER: US/10/178,449A

CURRENT APPLICATION NUMBER: PCT/US00/11952

PRIOR FILING DATE: 2000-05-03

PRIOR FILING DATE: 1999-05-07

PRIOR FILING DATE: 2000-05-03

~

NAME/KEY: CDS

엄

ઠે

ઠે 유 g

ઠ

ò

ઠ

```
272 TGAAAAACTCGCTCAAGATAAGTTAAAAGCTGAAGAGCTTGCAAAAGACAAACTCAAGGC 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            147 CTGTGGCAACACGGGACACTGTGACGACCAGTGTAAGTCGTGGGAGACTGCAGCCCATGG 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      207 IGGIGICATGIGCGIGGIGGGAAACACATGIGCTICTGCTACTICAATTGTAAAGAAGC 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      275 AGCGTGTCATGTGCGTAACGGGAAACACATGTTTTTTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGARARAGCTTGCTCARGACARACTTRARAGCCGARCAACTCGCTCAAGACAAACTTAATG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            267 cdahahactrideceahadachahactrahedahaharredgecergargaegrirahag 325
                                                                     335 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37.8%; Score 168.6; DB 15; Length 460;
81.6%; Pred. No. 1e-36;
cive 0; Mismatches 44; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Famodu, Omolayo O.
APPLICANT: Herrmann, Rafael
APPLICANT: Herrmann, Rafael
APPLICANT: Herrmann, Rafael
APPLICANT: Mcucchen, Billy Fred
APPLICANT: Miao, Guo-Hua
APPLICANT: Preenall, James K.
APPLICANT: Rafalski, Jan antoni
APPLICANT: Rafalski, Jan antoni
APPLICANT: Rafalski, Jan antoni
APPLICANT: Rafalski, Jan antoni
APPLICANT: Weng, Zude
TITLE OF INVENTION: Plant Defensins
FILE REFERENCE: 35718/249123
CURRENT APPLICATION NUMBER: US 10/030,516
PRIOR APPLICATION NUMBER: US 10/030,516
PRIOR APPLICATION NUMBER: US 60/133,039
PRIOR FILING DATE: 2000-05-03
PRIOR APPLICATION NUMBER: US 60/133,039
PRIOR FILING DATE: 1999-05-07
NUMBER OF SEQ ID NOS: 51
SEQ ID NO 3
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-178-449A-1

Sequence 1, Application US/10178449A

Publication No. US2003014036BA1

GENERAL INFORMATION:

APPLICANT: Famodu, Omolayo O.

APPLICANT: Herrmann, Rafael

APPLICANT: Lu, Albert L.

APPLICANT: MCCutchen, Billy Fred
                                                                                                                                                                                                                                                                                                                                   ; Sequence 3, Application US/10178449A; Publication No. US20030140368A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Dimorphotheca sinuata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 81.61
Matches 195; Conservative
                                                                                                                                                                                                                                                                                                          US-10-178-449A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-178-449A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            460
                      212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335
                      쉽
                                                                ò
                                                                                                           g
                                                                                                                                                               ð
                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                           ô
                                                                                                                                                                                                                                                                                                                                                                                                                               257
                                                                                                                                                                                                                 CTGTGGCAATACGGGACATTGTGACAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                        275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335 CGANAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             258 TGAAAAACTCGCTCAAGATAAGCTAAAAGCAGAAGAGCTTGCTAAAGACAAACTCAAGGC 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92 AGANATCTCGAGTGTGAGAGAGAGAGTATGCGAGAGAGAGATAGCAAGACATGGTCAGGCAA 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  275 AGCGTGTCATGTGCGTAACGGGAAACACATGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                           155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                         198 AGCTTGTCATGTGCGTGGAGGAAACACATGTGCTTTTGTTATTTCAATTGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                  Score 209.4; DB 15; Length 529;
Pred. No. 4.2e-48;
0; Mismatches 51; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              395 CCAAAAGCTTGACCGTGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 579;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
45.5%; Score 203; DB 15; Length 5'
Best Local Similarity 81.1%; Pred. No. 2.7e-46;
Matches 236; Conservative 0; Mismatches 55; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
US-10-178-449A-31
Sequence 31, Application US/10178449A
Sequence 31, Application US/10178449A
Sequence 31, Application US/10178449A
SEMERAL INFORMATION:
APPLICANT: Femodu, Omolayo O.
APPLICANT: Herrmann, Rafael
APPLICANT: McCutchen, Billy Fred
APPLICANT: McCutchen, Billy Fred
APPLICANT: Mao, Guo-Hua
APPLICANT: Rafalski, James K.
APPLICANT: Rafalski, James K.
APPLICANT: Rafalski, James K.
APPLICANT: Rafalski, James K.
CURENT PRIGNED PROJ. 200-06-01
FILE REFERENCE: 35718/249123
CURRENT APPLICATION NUMBER: US/10/178,449A
CURRENT APPLICATION NUMBER: US/10/178,449A
CURRENT FILING DATE: 2000-06-03
FRIOR FILING DATE: 2000-05-03
FRIOR FILING DATE: 2000-05-03
FRIOR FILING DATE: 2000-05-03
FRIOR APPLICATION NUMBER: US 60/133,039
FRIOR FILING DATE: 1999-05-07
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FABELSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Vernonia mespilifolia
                                                                                  Query Match
Best Local Similarity 82.5%;
Matches 240; Conservative
         ; LOCATION: (25)...(372)
US-10-178-449A-48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; ORGANISM: Verr
US-10-178-449A-31
                                                                                                                                                                                                                                                                          215
```

윱

ò

ద ò

ö

```
LENGTH: 461
TYPE: DNA
ORGANISM: Helianthus annuus
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-178-449A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 13
                                                                                                                                                                                                                                                                                                              9/
                                                                                                                                                                                                                                                                                                                                                                                                                                                275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               395
                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          140 CTGTGGCAACACGGGACACTGTGACGACCAGTGTAAGTCGTGGGAGACTGCAGCCCATGG 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200 recercicarerecereciesaaacacarerecriciecracircaarreraaasaase 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAAAAGCTTGCTCAAGACAAACTTAAAAGCCGAACAACTCGCTCAAGACAAACTTAATG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAAAGCTTGCCCAAGACAAGCTCAACGCTGAAAAATTCGGCCGTGATGACGTTAAAG 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37.8%; Score 168.6; DB 15; Length 503; 81.6%; Pred. No. 1.1e-36; tive 0; Mismatches 44; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature; LOCATION: 321, 349, 416, 458, 474, 479, 482, 502; COTHEN INFORMATION: n = A,T,C or G US-10-178-449A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Famodu, Omolayo O.
APPLICANT: Herrmann, Rafael
APPLICANT: Herrmann, Rafael
APPLICANT: McCutchen, Billy Fred
APPLICANT: Miao, Guo-Hua
APPLICANT: Preenall, James K.
APPLICANT: Rafaelski, Jam antoni
APPLICANT: Referalls Ki, Jan antoni
APPLICANT: Weng, Zude
TITLE REPERENCE: 35718/249123
CURRENT APPLICATION NUMBER: US/10/178,449A
CURRENT FILING DATE: 2000-06-21
PRIOR APPLICATION NUMBER: US/10/130,516
PRIOR APPLICATION NUMBER: US 0/030,516
PRIOR APPLICATION NUMBER: US 0/030,516
PRIOR APPLICATION NUMBER: US 0/133,039
PRIOR PILING DATE: 2000-05-03
PRIOR PILING DATE: 2000-05-03
PRIOR PILING DATE: 1999-05-07
NUMBER OF SEQ ID NOS: 51
SEQ ID NO 46
                                                                              TITLE OF INVENTION: Plant Defensins
FILE REFERENCE: 35718/349123
CURRENT APPLICATION NUMBER: US/10/178,449A
CURRENT FILING DATE: 2000-06-21
PRIOR APPLICATION NUMBER: US 10/030,516
PRIOR PILING DATE: 2000-05-03
PRIOR PILING DATE: 2000-05-03
PRIOR PILING DATE: 1999-05-07
PRIOR SPLING DATE: 1999-05-07
PRIOR SEQ ID NOS: 51
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 46, Application US/10178449A Publication No. US20030140368A1 GENERAL INFORMATION:
                    Presnail, James K.
Rafalski, Jan antoni
Weng, Zude
                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Dimorphotheca sinuata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 81.6
Matches 195; Conservative
Miao, Guo-Hua
                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 1
LENGTH: 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
AGCGTGTCATGTGCGTAACGGGAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                        155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                               215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                   136 ATGTGGCAACACAGACACTGTGACCAGTGCAAGTCTTGGGAGGGTGCAGCCCATGG 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196 AGCTTGTCACGTGCGGTGGGAAACACATGTGCTTCTGCTACTTCAACTGTTCCAAAGC 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256 CCAGAAGTTGGCTCAGGATAAACTCATAGCAGAAGAGCTCGCCAAGGAGAAGATTGAAGC 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                      Gaps
                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 156.4; DB 15; Length 457;
Pred. No. 2.6e-33;
0; Mismatches 56; Indels 0;
                                                                                                                 Length 461;
                                                                                                                                                                 55; Indels
                                                                                                         Query Match
36.1%; Score 161; DB 15;
Best Local Similarity 77.9%; Pred. No. 1.4e-34;
Matches 194; Conservative 0; Mismatches 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Rafalski, Jan antoni
APPLICANT: Weng, Zude
TITLE OF INVENTION: Plant Defensins
FILLE REFERENCE: 35718/349123
CURRENT APPLICATION NUMBER: US/10/178,449A
CURRENT FILING DATE: 2002-06-21
PRIOR APPLICATION NUMBER: US/030,516
PRIOR FILING DATE: 2000-05-03
PRIOR FILING DATE: 2000-05-03
PRIOR FILING DATE: 1999-06-07
NUMBER OF SEQ ID NOS: 51
NUMBER OF SEQ ID NOS: 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Parthenium argentatum Grey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 13, Application US/10178449A Publication No. US20030140368A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Famodu, Omolayo O.
APPLICANT: Herrmann, Rafael
APPLICANT: Lu, Albert L.
APPLICANT: Micoltchen, Billy Fred
APPLICANT: Mico, Guo-Hua
APPLICANT: Presnail, James K.
APPLICANT: Rafalski, Jan antoni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: 424, 436
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 35.1%;
Best Local Similarity 77.2%;
Matches 190; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAAAAGCT 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAAAAGGT 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
; NAME/KBY: CDS
; LOCATION: (14)...(340)
US-10-178-449A-46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
274 CGAGAAGATGGCCCAGGATAAACTCCGAGCTGAAGAGCTTGCCAAGGAGAAGATTGAAGC 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161 TIGIGGIAACACAAGACATTGTGACGACCAATGCAAGTCTTGGGAGGGGGCGCCCATGG 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281 ceagaadargeccaagaraaacrecgaecreaagacrreccaagaagarreaage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 603;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 156.4; DB 15; Length
Pred. No. 3e-33;
0; Mismatches 56; Indels
                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Pemodu, Omolayo O.
APPLICANT: Pemodu, Albert L.
APPLICANT: L. Albert L.
APPLICANT: McCutchen, Billy Fred
APPLICANT: Miao, Guo-Hua
APPLICANT: Mao, Guo-Hua
APPLICANT: Rafalski, Janea K.
APPLICANT: Rafalski, Janeantoni
APPLICANT: Rafalski, Janeatoni
APPLICANT: Rafalski, Janeantoni
APPLICANT: Rafalski, Janeantoni
APPLICANT: Rafalski, Janeantoni
APPLICANT: Rafalski, Janeantoni
PILE REFERENCE: 35718/249123
CURRENT APPLICATION NUMBER: US 10/030,516
PRIOR PILING DATE: 2000-05-03
PRIOR PILING DATE: 2000-05-03
PRIOR PILING DATE: 1999-05-07
NUMBER OF SEQ ID NOS: 51
SOFTHARE: ESELESC for Windows Version 4.0
SEQ ID NO 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Sequence 21, Application US/10178449A; Publication No. US20030140368A1; GENERAL INFORMATION: APPLICANT: Famodu, Omolayo O.; APPLICANT: Herrmann, Rafael; APPLICANT: McCutchen, Billy Fred; APPLICANT: McCutchen, Billy Fred; APPLICANT: Miao, Guo-Hua
                                                                                                                                                                                                                    RESULT 8
US-10-178-449A-11
Sequence 11, Application US/10178449A
Publication No. US20030140368A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Parthenium argentatum Grey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 77.2%;
Matches 190; Conservative
                                                                        395 CCAAAA 400
                                                                                                                                  334 TGAAAA 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 395 CCAAAA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        341 TGAAAA 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-178-449A-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 335
                     셤
                                                                  ò
                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                            ô
275 AGCGTGTCATGTGCGTAACGGGAAACACATGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                            211 AGCTTGTCATGTGCGCGGTGGGAACACATGTGCTTCTGCTACTTCCAGTGCCCCAAAGC 270
                                                                                                                                                                                                                                                                                                                        CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                         271 CGAGAAGATGGCCCAGGATAAACTCCGAGCTGAAGAGCTTGCCAAGAAGAAGATTGAAGC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    154 TIGIGGIAACACAAGACATIGTGACGACGACGAGGAAGTCTTGGGAGGGTGCATGG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  214 AGCTTGTCATGTGCGCGGTGGGAACACATGTGCTTCTGCTACTTCCAGTGCCCCAAAGC 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAAAAGCTIGCTCAAGACAAACTIAAAGCCGAACAACTCGCTCAAGACAAACTIAAIGC 394
                                                                                        CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 156.4; DB 15; Length
Pred. No. 2.7e-33;
0; Mismatches 56; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOS-10-11/0-449AP.

JOS-10-11/0-449AP.

JOS-10-11/0-449AP.

JOS-201-10-10/0-49AP.

JOS-201-10/0-49AP.

JOS-201-10/0-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Parthenium argentatum Grey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature

DCCATION: 413

CTHER INFORMATION: n = A,T,C or G

US-10-178-449A-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 77.2
Matches 190; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   331 TGAAAA 336
                                                                                                                                                                                                                                                                                                                                                                                                                                         395 CCAAAA 400
                                                                                                                                                                                                                                                                                                                           332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 338
                                                                                                                                        셤
                                                                                                                                                                                                        ਨੇ
                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                     ò
                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठे
```

```
AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99 AGAAATCGGATCGGTGAAAGGAGAATTATGTGAGAAGGCAAGCCAGACATGGTCGGAAC 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   149 TIGIGGTAACACAAGACACTGTGACGACCAACGAAGTCTTGGGAGGGTGCAGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  209 AGCTTGTCATGTGCGCGGTGGGAAACACATGTGCTTCTGCTACTTCCAGTGCCCCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                   155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                               Query Match 34.7%; Score 154.8; DB 15; Length 460; Best Local Similarity 76.8%; Pred. No. 7.4e-33; Matches 189; Conservative 0; Mismatches 57; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 17; Length 565;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Hu, Xu
APPLICANT: Hu, Xu
TITLE OF INVENTION: Sunflower Anti-Pathogenic Proteins and
TITLE OF INVENTION: Genes and their Uses
TITLE OF INVENTION: Genes and their Uses
FILE REFERENCE: 5718-90
CURRENT APPLICATION NUMBER: US/10/636,396
CURRENT APPLICATION NUMBER: US/09/589,733C
PRIOR FILING DATE: 2000-06-08
PRIOR FILING DATE: 1999-06-03
PRIOR FILING DATE: 1999-06-03
PRIOR FILING DATE: 1999-06-23
PRIOR FILING DATE: 1999-11-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 154.2; DB 17; Length
Pred. No. 1.2e-32;
0; Mismatches 58; Indels
  NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                 TYPE: DNA
ORGANISM: Parthenium argentatum Grey
                                                                                                                                                                      NAME/KEY: misc_feature

1. LOCATION: 342_

1. COTHER INFORMATION: n = A,T,C or G

US-10-178-449A-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 6, Application US/10636396; Publication No. US20040073971A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Crasta, Oswald R. Duvick, Jon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34.6%;
76.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Helianthus annuus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 76.5
Matches 189; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Bidney, Dennis
APPLICANT: Crasta, Oswald
APPLICANT: Duvick, Jon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    395 CCAAAA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329 TGAAAA 334
                                                                             LENGTH: 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-636-396-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-636-396-6
                                                   SEQ ID NO 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132 TTGTGGTAACACAAGACACTGTGACGACCAATGCAAGTCTTGGGAGGGTGCAGCCCATGG 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     252 ceagaagargecccaegaraacrcccaecreaagacrreccaaggaagarreaagc 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 15; Length 458;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34.7%; Score 154.8; DB 15; Length
76.8%; Pred. No. 7.4e-33;
tive 0; Mismatches 57; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 17. Application US/10178449A
Fublication No. US20030140368A1
GENERAL INFORMATION:
APPLICANT: Famedu, Omolayo O.
APPLICANT: Herrmann, Rafael
APPLICANT: Lu. Albert L.
APPLICANT: McCutchen, Billy Fred
APPLICANT: Miao, Guo-Hua BK.
APPLICANT: Rafalski, Jan antoni
APPLICANT: Rafalski, Jan antoni
APPLICANT: Rafalski, Jan antoni
APPLICANT: Weng, Zude
ITLE REFERENCE: 35718/249123
CURRENT APPLICATION NUMBER: US/10/178,449A
CURRENT APPLICATION NUMBER: US 10/030,516
PRIOR APPLICATION NUMBER: US 10/030,516
PRIOR APPLICATION NUMBER: PCT/US00/11952
PRIOR APPLICATION NUMBER: US 0030,516
PRIOR PILING DATE: 2000-05-03
PRIOR PILING DATE: 1999-05-07
               APPLICANT: Rafalski, Jan antoni
APPLICANT: Weng, Zude
TITLE OF INVENTION: Plant Defensins
FILE REFERENE: 35718/249123
CURRENT APPLICATION NUMBER: US/10/178,449A
CURRENT FILING DATE: 2002-06-21
PRIOR APPLICATION NUMBER: US 10/030,516
PRIOR FILING DATE: 2000-05-03
PRIOR PILING DATE: 2000-05-03
PRIOR PILING DATE: 1999-05-07
PRIOR PILING DATE: 1999-05-07
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FASHERD FOR WINDOWS VERSION 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Parthenium argentatum Grey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature
i LOCATION: 322, 375, 402, 452
CTHER INFORMATION: n = A,T,C or G
US-10-178-449A-21
Presnail, James K.
Rafalski, Jan antoni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 76.8'
Matches 189; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           395 CCAAAA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         312 TGAAAA 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-178-449A-17
                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 21
LENGTH: 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         335
```

ઠે 유 ઠ g ઠે 셤 Š 셤 ઠ 셤

```
GENERAL INFORMATION:
APPLICANT: Famodu, Omolayo O.
APPLICANT: Herrmann, Rafael
APPLICANT: Herrmann, Rafael
APPLICANT: McCutchen, Billy Fred
APPLICANT: McCutchen, Billy Fred
APPLICANT: Mao, Guo-Hua
APPLICANT: Rafalski, Jan antoni
APPLICANT: RAFALSTON NUMBER: US/10/178,449A
CURRENT APPLICATION NUMBER: US/10/1030,516
PRIOR FILING DATE: 2000-05-03
PRIOR FILING DATE: 2000-05-03
PRIOR FILING DATE: 2000-05-03
PRIOR FILING DATE: 1999-05-07
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Parthenium argentatum Grey
Sequence 19, Application US/10178449A Publication No. US20030140368A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature

DCGATION: 445, 452

CTHER INFORMATION: n = A,T,C or G

US-10-178-449A-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 76.4%
Matches 188; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 395 CCAAAA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     334 TGAAAA 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                        218
                                                                                                                                                                           274
                                                                           AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                       CGAAAAAGCTTGCTCAAGACAAAACTTAAAAGCCGAACAACTCGGTCAAGACAAACTTAAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99 AGAAATCGGATCGGTGAAAGGAGAATTATGTGAGAAGGCAAGCCAGACATGGTCCGGAAC 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            159 ATGTGGGAAGACAAAACACTGTGATGACCAGTGCAAGTCTTGGGAGGTGCAGCCATGG 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   279 CCAGAAGTTGGCTCAGGATAAACTCAGAGGGGGAAGAGGCTCGCCAAGGAGAAGATGAACC 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                        219 AGCTTGTCACGTGCGCGATGGGAAACACATGTGCTTCTGCTACTTCAACTGTTCCAAAGC
CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                    RESULT 12
US-10-656-026-6
IS-10-656-026-6
Publication No. US20040111761A1
GENERAL INFORMATION:
APPLICANT: Bidney, Dennis L.
APPLICANT: Crasta, Oswald R.
APPLICANT: Duvick, Jon
APPLICANT: Lu, Gulhua
ITILE OF INVENTION: Sunflower Anti-Pathogenic Proteins and
TITLE OF INVENTION: Genes and their Uses
ITILE OF INVENTION: Genes and their Uses
FILE REFERENCE: 5718-90
CURRENT FILING DATE: 2003-08-07
PRIOR FILING DATE: 2000-06-08
PRIOR FILING DATE: 1999-11-01
PRIOR FILING DATE: 1999-11-01
NUMBER OF SEQ ID NOS: 41
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 6
LENGTH: 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 18; Length 565;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 154.2; DB 18; Length
Pred. No. 1.2e-32;
0; Mismatches 58; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34.6%;
Best Local Similarity 76.5%;
Matches 189; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 TYPE: DNA
1 ORGANISM: Helianthus annuus
US-10-636-026-6
                                                                                                                                                                                                                                                                       339 CGAAAAG 345
                                                                                                                                                                                                                                    CCAAAAG 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAAAAG 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAAAAG 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      335 (
215
                                                                           275
                                                                                                                                                       335
                                                                                                                                                                                                                                    395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                  셤
                                                                         ઠ
                                                                                                      g
                                                                                                                                                   ò
                                                                                                                                                                                         셤
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
```

```
274
                                                                                                                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                              94 AGAAATCGGATCGGTGAAGGAGAACTATGTGAGAAGGCAAGCCAAGACATGGTCTGGAAA 153
                                                                                                                                                                                                                                                                                                                                                                                                                        275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        214 AGCTTGTCATGTGCGCGGTGGGAAACACACATGTGCTTCTGCTACTTCCAGTGCCCCAAAGC 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    335 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274 cGAGAAGATGGCCCAGGATAAACTCCGAGCTGAAGAGCTTGCCAAGGAGAAGATTGAAGT 333
                                                                                                                                                                                                                                                                                215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                           155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                         Gaps
                                                                     ó,
   DB 15; Length 464;
34.3%; Score 153.2; DB 15; Length 76.4%; Pred. No. 2.1e-32; tive 0; Mismatches 58; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14

US-10-170-449A-23

Sequence 23, Application US/10178449A

Publication No. US20030140368A1

GENERAL INFORMATION:
APPLICANT: Famodu, Omolayo O.
APPLICANT: Lu, Albert L.
APPLICANT: Lu, Albert L.
APPLICANT: Miao, Guo-Hua
APPLICANT: Miao, Guo-Hua
APPLICANT: Wengalalki, James K.
```

ö

```
ઠ
                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   146 TTGTGGTAACAACAACGACCAATGCAAGTCTTGGGAGGTGCACCCATGG 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCTAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        266 CGAGAAGATGGCCCAGGATAAACTCCGAGCTGAAGACTTCCCAAGAGAAGATTGAAGT 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAAAGCTTGCTCAAGACAAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 34.3%; Score 153.2; DB 15; Length 472; Best Local Similarity 76.4%; Pred. No. 2.1e-32; Matches 188; Conservative 0; Mismatches 58; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Famodu, Omolayo O.
APPLICANT: Herrmann, Rafael
APPLICANT: Herrmann, Rafael
APPLICANT: Mcucchen, Billy Fred
APPLICANT: Mcucchen, Billy Fred
APPLICANT: Meao, Guo-Hua
APPLICANT: Rafalski, Jan antoni
APPLICANT: Rafalski, Jan antoni
APPLICANT: Weng, Zude
TITLE OF INVENTION: Plant Defensins
TITLE OF INVENTION: 191at Defensins
TITLE OF INVENTION NUMBER: US/10/178,449A
CURRENT APPLICATION NUMBER: US 10/030,516
PRIOR APPLICATION NUMBER: US 10/030,516
PRIOR APPLICATION NUMBER: US 10/030,516
PRIOR APPLICATION NUMBER: US 60/133,039
PRIOR FILING DATE: 2000-05-03
PRIOR FILING DATE: 1999-05-07
FILE REFERENCE: 35718/249123
CURRENT APPLICATION NUMBER: US/10/178,449A
CURRENT FILING DATE: 2002-06-21
FRIOR APPLICATION NUMBER: US 10/030,516
FRIOR FILING DATE: 2000-05-03
FRIOR FILING DATE: 2000-05-03
FRIOR APPLICATION NUMBER: PCT/US00/11952
FRIOR APPLICATION NUMBER: US 60/133,039
FRIOR FILING DATE: 1999-05-07
NUMBER OF SEQ ID NOS: 51
SOFTWARE: FBAESEQ for Windows Version 4.0
SEQ ID NO 23
LENGTH: 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 51
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 15
LENGTH: 439
                                                                                                                                                                                                                                                                                      TYPE: DNA
ORGANISM: Parthenium argentatum Grey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 15, Application US/10178449A Publication No. US20030140368A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
i LOCATION: 368
CTHEN INFORMATION: n = A,T,C or G
US-10-178-49A-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      395 CCAAAA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              326 TGAAAA 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-178-449A-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   335
                                                                                                                                                                                                                                                                                                                                FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
```

```
155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      153 TTGTGGTAACACAAGACATTGTGACGACCAATGCAAGTCTTGGGAGGGTGCAGCCCATGG 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          213 AGCTIGICAIGIGGGGGGGGGAACACAIGIGCTICIGCTACTICCAGIGCCCCAAAGC 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            335 CGAAAAGCTTGCTCAA-GACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              273 CGANAAGATGGCCCANGGATAAACTCCGAGCTGAAGAAGCTTGCCAAGGAGAGATTGAA 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGCCCATGG
                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                       DB 15; Length 439;
                                                                                                                                                                                                                                                                Query Match
31.0%; Score 138.4; DB 15; Length
Best Local Similarity 71.9%; Pred. No. 2.8e-28;
Matches 192; Conservative 0; Mismatches 74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    394 CCCAAAAGCTTGACCGTGATGCCAAGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333 GCTGAAAAGAGCCAGNCAAACCTTGA 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search completed: March 18, 2005, 19:33:33 Job time : 422 secs
TYPB: DNA
ORGANISM: Parthenium argentatum Grey
                                                              FEATURE:

NAME/KEY: misc_feature

LOCATION: 276, 288, 349, 438

OTHER INFORMATION: n = A,T,C or G
US-10-178-449A-15
```

THIS PAGE BLANK (USPTO)

```
March 18, 2005, 12:39:02; Search time 7103 Seconds (without alignments) 2390.070 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                    1 atggtgaatcggtcggttgc......ttccaaacgttgaacatccg 446
                                                                                                                                                                                                                                                                                                                                                 68479088
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd
                                                                                                                                                                                                                                                                                                            34239544 seqs, 19032134700 residues
                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                         Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                            US-09-763-019-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_est1:;
gb_htc::
gb_htc::
gb_est4::
gb_est4::
gb_est6:::
gb_gss1::
                                                                                                                                                                                                                                                      IDENTITY NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Perfect score:
                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database :
                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Result
No.
                                                                                                                                                                              Title:
```

QGE21E24. QGE4h04.Y QGH7P24.Y QGF9P04.Y AJ412176 DH0AB51ZE AJ541276 QGA12M13. AJ541406 AU306450 AJ412470 QGA16N20. BQ989575 QGF18A17 Description BQ984300 BQ984745 BQ984745 BQ995419 BQ995419 AJ412176 AJ54180 AJ5412470 AJ5470 AJ5470 AJ5470 BQ845488 CD846862 AJ541276 BQ844100 AJ541406 AJ541283 BQ847005 AU306450 AJ412470 BQ845488 BQ861273 BU011479 Query Match Length DB 641 6641 6668 6668 6668 6668 6669 6669 6669 94 97.77 97.6 97.6 97.6 97.6 198.6 197 197 177.2 160.6 154.2 153.6 131.2 127 127 123.6

QGJ1N15.y QGG21E06. QGJ8C12.y QGF19114.

BQ999150 BU014714 BQ990122

BU014714 BQ990122

BU011346 BU014657 30990734

2222111111111 987654 22221111111111 987654

QGF20P11.

BQ988151 QGF14C09. BU012833 QGJ3A06.y CN253987 BIP0051 B BU012812 QGJ2P08.y BQ981882 QGE14F10. CO553309 SA_MF_01_ CO5533309 SA_MF_01_ BU012626 QGJ2H01.y BU011459 QGJ1H09. BU011459 QGJ16E18.y BU011459 QGJ16E18.y AV786126 AV86126 AV824429 AV824429 CN847468 PG07043F0 BH551774 BGGJA18TF BH551725 BOHZO9UTF CL504812 SAIL 743 CCT49420 KBFAĒ001P BH473290 BGGXA1GTR BH57225 BOHZO9UTF CL504812 SAIL 743 CG779420 KBFAĒ001P BH473290 BGGXA1GTR BH73290 BGGXA1GTR	ALIGNMENTS  BQ889575  G04 bp mRNA linear EST 21-AUG-2002  GGR18A17, mRNA sequence.  BQ989575.1 GI:22409110  ESST.  Lactuca sativa Lactuca sativa Lactuca stiva Lactuca L	Kozik, A., Michelmore, R.W., Knapp, S., Matvienko, M., Rieseberg, L., Lin, H., van Damme, M., Lavelle, D., Cheveller, P., Ziegle, J., Lin, H., van Damme, M., Lavelle, D., Cheveller, P., Ziegle, J., Lin, H., van Damme, M., Lavelle, D., Cheveller, P., Ziegle, J., Lai, Z., Church, G., Jackson, L. and Bradford, K., Zhou, Y., Lettuce and Sunflower ESTB from the Compositae Genome Project Unpublished (2002)  Concact: Alexander Rozik [R.W.Michelmoxe]  Concact: Alexander Kozik [R.W.Michelmoxe]  Contact: Alexander Kozik [R.W.Michelmoxe Lab University of California at Davis (UCD)  Asmundson Hall, UCD, Davis, CA 95616, USA  Tel: 1-(530)-742-1742  Fax: 1-(530)-752-9659  Email: akozik@atgc.org [michelmore@vegmail.ucdavis.edu]  belongs to contig QG_CA_Contig6866, see http://cgpdb.ucdavis.edu/	Location/Qualifiers  1604  /organism="Lactuca sativa" //organism="Lactuca sativa" //ordivar="L.serriola" /b xref="taxon:426" /db xref="taxon:426" /db b ref="E.coli" /lab host="E.coli" /lab host="Vector: pBRcBNASfiAB; The library was constructed from 10 different sources of RNA from a single genotype. /schone: Town of different sources of and 3' tags to distinguish each incorporated unique 5' and 3' tags to distinguish each source of RNA. cDNAs were then pooled, size-fractionated, directionally cloned into a custom medium-copy vector and directionally cloned into a custom medium-copy vector and
BQ988151 BU012833 BU014798 BU012812 BQ981882 CO553309 CO553309 BU012626 BU011659 AVR24429 CN84746 BH651774 BH657225 CC549420 BH581774 BH677235 CC749420 CN49420 BH581774 BH677235 CC749420	ALIGNMENTS  604 bp  604 bp  equence.  (2409110  iplantae; Streptop lagnoliophyta; eudi	'K.W., Knap 'Lavelle,D J., Slabaug ackson,L. a ackson,L. a ucdavised cozik [R.W.M ble Crops, rnia at Dav pavis, CA 29 g	JETS TOW: A column: 17. Location/Qualifiers Location/Qualifiers Locanism="Lactuca sativa" /mol type="mRNA" /cultivar="Laxon:4236" /cultivar="Laxon:4236" /cultivar="L. sorii" /lab.host="E.coli" /lab.host="E.coli" /clone lib="QG EFGHJ lettuce /note="Vector: pBRcDNASfiAB; from 10 different sources of from 10 different sources of from 10 different sources of separate cDNAs were generate incorporated unique 5' and source of RNA. cDNAs were th directionally cloned into a
8070007770007117000770	G E G G E E G G E E E E E E E E E E E E	OG CC	/Out A / Out A
701 456 656 656 656 602 336 336 441 441 516 673 373 373 373	BQ989575  QGF18A17. yg.abl QG_EFGH QGF18A17, mRNA sequence BQ989575. 1 GI:22409110 EST. Lactuca sativa Llactuca sativa Llactuca sativa Sukaryota; Viridiplanta Spermatophyta; Magnolio	Michelm Michelm Damme V. Kolku V. Kolku J. Kolku J. G. Sunfl J. G. Sunfl J. C. Cal J. C. Cal O. C. Cal O. T. C. Cal Cal O. T. C. Cal Cal O. T. C. Cal Cal Cal Cal Cal Cal Cal Cal Cal Cal	F18 row: A c Location/Quali . 604 Organism="Lac Mol type="mRN Cultivar="L. Cultivar="L. Cultivar="L. Cultivar="L. Cultivar="L. Cultivar="L. Cultivar="L. Cultivar="L. Cultivar="L. Cultivar="Cultiva
17.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	BQ989575 GGF18A17, mRNA BQ989575, mRNA BQ989575.1 GI BGRT. Lactuca sativa Lactuca sativa Lactuca sativa Lactuca sativa Lactuca sativa Lactuca sativa Lactuca sativa Lactuca sativa Lactuca sativa Lactuca sativa Cacinos cama compa	k, A., Vas., Son, V., Choses Son, V., Ch., Ch., Ch., Ch., Ch., Ch., Ch., Ch	CFF
6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	BOOSTIL Lact Lact Boostil Boostil Boostil Boostil	Kozi Lin, Elli, Elli, Elli, Contro Contro Depe Oniv Asmu	
22222222222222222222222222222222222222	RESULT 1 BQ989575 LOCUS DEFINITION ACCESSION KEYWORDS SOURCE ORGANISM	AUTHORS AUTTORS TITLE JOURNAL COMMENT	FEATURES BOUFCE
U U U	RES BQ9 LLOC LOC BQ9 VERY KEY KEY KEY KEY KEY KEY KEY KEY KEY KE	REE P 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<del>1</del> 23

```
616 bp mRNA linear EST 21-AUG-2002
QGE21E24.yg.abl QG_EFGHJ lettuce serriola Lactuca sativa cDNA clone
QGE21E24, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ä
transformations made with four size classes to minimize size bias. Details of each source of RNA and library construction can be obtained at http://cgpdb.ucdavis.edu/TAG_LISSUE=germinating seeds TAG_LIB=GO EFGHJ lettuce serriola TAG_SEQ=ICTGGGGGGG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106 AGATATCACGAGTGTGAGAGAGAACTATGCGAGAAACCTAGCAAGACATGGTCGGGTAA 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         226 AGCATGTCACGTGCGTGGAGGGAAACACATGTGCTTCTGCTACTTTAATTGTCCTAAAGC 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, asterids, campanulids, Asterales, Asteraceae, Cichorioideae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166 chercicale chercical de la comparta del comparta del comparta de la comparta del la comparta de la comparta della comparta de la comparta de la comparta de la comparta della compa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                335 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Department of Vegetable Crops, R.W.Michelmore Lab
University of California at Davis (UCD)
Asmundson Hall, UCD, Davis, CA 95616, USA
Tel: 1-(530)-752-9659
Email: akozik@atgc.org [michelmore@vegmail.ucdavis.edu]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cichorieae, Lactuca.

1 (bases 1 to 616)
Kozik, A., Michelmore, R.W., Knapp, S., Matvienko, M., Rieseberg, L.,
Lin, H., van Damme, M., Lavelle, D., Chevalier, P., Ziegle, J.,
Ellison, P., Kolkman, J., Slabaugh, M.S., Livingston, K., Zhou, Y.,
Lai, Z., Church, S., Jackson, L. and Bradford, K.
Lettuce, and Sunflower ESTs from the Compositae Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gарв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        395 CCANANGCTTGACCG----TGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCC 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                                                                     Length 604;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indele
                                                                                                                                                                                                                                                                                                                                                                                               DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Alexander Kozik [R.W.Michelmore]
                                                                                                                                                                                                                                                                                                                                                                                          44.5%; Score 198.6; DB 5
llarity 82.0%; Pred. No. 7.5e-43;
Conservative 0; Mismatches 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  organism="Lactuca sativa"

mol type="mRNA"

cullivar="L.serriola"

db xref="taxon:4236"

clone="GES1E34"

lab host="E.coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E21 row: E column: 24
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://compgenomics.ucdavis.edu/
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BQ984300.1 GI:22401825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . .616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lactuca sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lactuca sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plate: QGE21
                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BQ984300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 242;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       275
                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 2
BQ984300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                      ORIGIN
```

g

ò 8 ò ద

g ò g ઠે

```
/note="Vector: parconsfias; The library was constructed from 10 different sources of RNA from a single genotype. Separate cDNAs were generated using primers that incorporated unique 5, and 3' tags to distinguish each source of RNA. cDNAs were then pooled, size-fractionated, directionally cloned into a custom medium-copy vector and transformations made with four size classes to minimize size bias. Details of each source of RNA and library construction can be obtained at http://cgpdb.ucdavis.edu/TAG_IISSUE-germinating seeds
TAG_ILS-GG_EFGHJ_lettuce serriola
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             620 bp mRNA linear EST 21-AUG-2002 (QESH04.yg.abl QG EFGHJ lettuce serriola Lactuca sativa cDNA clone BQ984745
                                                                                                                                                                                                                                                                                                                                                                                                                                                         214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lactuca sativa
Lactuca sativa
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots,
seterids, campanulids, Asterales, Asteraceae, Cichorioideae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            226 AGCATGTCACGTGCGTGGAGGGAACACATGTGCTTCTGCTACTTTAATTGTCCTAAAGC 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: akozik@atgc.org [michelmore@vegmail.ucdavis.edu] belongs to contig QG_CA_Contig6866, see http://cgpdb.ucdavis.edu/for details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cichorieae; Lactuca.

1 (bases 1 to 620)

Kozik, Michelmore, R.W., Knapp, S., Matvienko, M., Rieseberg, L.,
Lin, H., van Damme, M., Lavelle, D., Chevalier, P., Ziegle, J.,
Ellison, P., Kolkman, J., Slabaugh, M.S., Livingston, K., Zhou, Y.,
Lai, Z., Church, S., Jackson, L. and Bradford, K.

Lettuce and Sunflower ESTs from the Compositae Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATATCACGAGTGTGAGAGAGAAACTATGCGAGAAACCTAGCAAGACATGGTCGGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          286 TGAAAAGCTTGCCCAAGACACAAAGCCAAAGAGCTCGCCCAAGACAACTCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                         155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             395 CCAAAAGCTTGACCG----TGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCC 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                                                                                                                                                                                                                                                          44.2%; Score 197; DB 5; Length 616;
llarity 81.7%; Pred. No. 2e-42;
Conservative 0; Mismatches 50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Department of Vegetable Crops, R.W.Michelmore Lab
University of California at Davis (UCD)
Asmundson Hall, UCD, Davis, CA 95616, USA
Tel: 1-(530) -742-1742
Fax: 1-(530) -752-9659
/clone_lib="QG_EFGHJ lettuce serriola"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Alexander Kozik (R.W.Michelmore)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   http://compgenomics.ucdavis.edu/
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E4 row: h column: 04. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BQ984745.1 GI:22402270
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plate: QGE4
                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                   Best Local Sim
Matches 241;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 335
                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
BQ984745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
```

FEATURES

```
Lactude sativations and the state of the sta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tch 44.2%; Score 197; DB 5; Length 641; al Similarity 81.7%; Pred. No. 2e-42; 241; Conservative 0; Mismatches 50; Indels
                                                                                                                                                                                                                                                                      organism="Lactuca sativa"
                                                                                                                                                                                                                                                                                                      /mol_type="mRNA"
/cultivar="L.serriola"
/db_xref="taxon:4236"
/clone="QGH7P24"
                                                                                                                                                                                                                                                                                                                                                                                                                                           lab_host="E.coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAG_SEQ=Not found"
Tel: 1-(530)-742-1742
Fax: 1-(530)-752-9659
Email: akozik@atgc.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BQ995419.1 GI:22414954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lactuca sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
BQ995419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGH7P24.yg.abl QG_EFGHJ lettuce serriola Lactuca sativa cDNA clone BU008575
                                                                                                                                                                                                                                                                                                                              Separate cDNAB were generated using primers that incorporated unique 5' and 3' tags to distinguish each source of RNA. cDNAB were then pooled, size-fractionated, directionally cloned into a custom medium-copy vector and transformations made with four size classes to minimize size bias. Details of each source of RNA and library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           construction can be obtained at http://cgpdb.ucdavis.edu/
TAG TISSUB=germinating seeds
TAG_LIB=QG_EFGHJ lettuce serriola
TAG_SEQ=TCTGTGCGGG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106 AGATATCACGAGTGTGAGAGGAGAACTATGCGAGAAACCTAGCAAGACATGGTCGGGTAA 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tracheophyta;
                                                                                                                                                                                                /lab_host="E.coli"
/clome_lib="@g ERGHJ lettuce serriola"
/note="Wector: pBRcDMSfiAB; The library was constructed
from 10 different sources of RNA from a single genotype.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta Spermatophyta; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta Spermatophyta; eudicotyledons; core eudicots; asterids; campanulids; Asterales; Asteraceae; Cichorioideae; Cichorieae; Lactuca.

1 (bases I to 641)

Kozik, A., Michelmore, R.W., Knapp, S., Marvienko, M., Rieseberg, L., Lin, H., van Damme, M., Lavelle, D., Chevalier, P., Ziegle, J., Ellison, P., Kolkman, J., Slabaugh, M.S., Livingston, K., Zhou, Y., Lai, Z., Church, S., Jackson, L. and Bradford, K.

Lettuce and Sunflower ESTS from the Compositae Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         286 TGAAAAGCTTGCCCAAGACAAACTCAAAGCCAAAGAGCTCGCCCAAGACAAAACTCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        226 AGCATGTCACGTGCAGGGAAACACATGTGCTTCTGCTACTTTAATTGTCCTAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            395 CCAAAAGCTTGACCG----TGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCC 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           346 TAAAAAGCTAGACCGGCCATGAGGACAAGAAAGTAGTACCAAATGTGGACCATCC 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 5; Length 620;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 197; DB 5; Length 62
Pred. No. 2e-42;
0; Mismatches 50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Department of Vegetable Crops, R.W.Michelmore Lab
University of California at Davis (UCD)
Asmundson Hall, UCD, Davis, CA 95616, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Alexander Kozik [R.W.Michelmore]
   1. .620
/organism="Lactuca sativa"
                                                               'moī_type="mRNA"
'cultivar="L.serriola"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  http://compgenomics.ucdavis.edu/
Unpublished (2002)
                                                                                                                                 db_xref="taxon:4236"
                                                                                                                                                             /clone="QGE4h04"
/lab host="E.col
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BU008575.1 GI:22442970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 81.7%;
Matches 241; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lactuca sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          335
   Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BU008575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
```

셤 ò g ઠ 유 ઠ g ð 셤

ò

```
GEF9904.yg.abl QG EFGHJ lettuce Berriola Lactuca Bativa cDNA clone QCF9904, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Separate cDNAs were generated using primers that incorporated unique 5, and 3, tags to distinguish each source of RNA. cDNAs were then pooled, size-fractionated, directionally cloned into a custom medium-copy vector and transformations made with four size classes to minimize size bias. Details of each source of RNA and library construction can be obtained at http://cgpdb.ucdavis.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              127 AGATATCACGAGTGTGAGAGAGAACTATGCGAGAAACCTAGCAAGAAGACATGGTCGGGTAA 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  247 AGCATGTCACGTGCGTGGAGGGAAACACATGTGCTTCTGCTACTTTAATTGTCCTAAAGC 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        307 TGAAAAGCTTGCCCAAGACAAAACTCAAAGCCAAAGAGCTCGCCCAAGACAAACTCAAAGC 366
Email: akozik@atgc.org [michelmore@vegmail.ucdavis.edu]
belongs to contig QG_CA_Contig6866, see http://cgpdb.ucdavis.edu/
for details.
Plate: QGH7 row: P column: 24.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone lib="QG EFGHJ lettuce serriola"
/note="Vector: pBRcDNASfiAB; The library was constructed
from 10 different sources of RNA from a single genotype.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTGGCAACACCGGACACTGTGATGGCCAGTGCAAATCTTGGGAGGTGGAGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTTCGCTCAAGACAAACTTAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 395 CCAAAAGCTTGACCG----TGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCC 445
```

us-09-763-019-5.rst

```
organism="Helianthus annuus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Helianthus annuus (common sunflower)
                                                                                                                                                                                                                                        /db_xref="taxon:4232"
                                                                                                                                                                                                                                                      /clone="HaDplR101A04"
                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                           /mol_type="mRNA"
/cultivar="Emil"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CD846862.1 GI:32530684
                                                                                                                                                                                                                                                                                                                          36.0%;
ilarity 78.1%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 606)
                                                                                                                                                                               1. .468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        395 CCAAAAG 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGANANG 340
                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoplante.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genoplante
                                                                                                                                                                                                                                                                                                                                          Best Local Simi
Matches 193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    334
                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
   REFERENCE
AUTHORS
TITLE
                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 7
CD846862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                               AJ412176 Helianthus annuus cv. Emil protoplast Helianthus annuus con a sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174 GGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACGGGACAT 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTGACAACCAATGTAAATCATGGAGGGTGCGGCCCATGGAGCGTGTCATGTGCGTAAC 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGAAACACATGTTTCTGTTACTTCAATTGTAAAAAAGCCGAAAAGCTTGCTCAAGAC 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  354 AAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAGCTTGACGG---- 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Helianthus annuus (common sunflower)
Helianthus annuus
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; campanulids; Asterales; Asteraceae; Asteroideae;
Helianthese; Helianthus.
          Contact: Alexander Kozik [R.W.Michelmore]
Department of Vegetable Crops, R.W.Michelmore Lab
University of California at Davis (UCD)
Asmundson Hall, UCD, Davis, CA 95616, USA
Tel: 1-(530)-742-1742
Email: akozik@atgc.org [michelmore@vegmail.ucdavis.edu]
belongs to contig QG_CA_Contig6866, see http://cgpdb.ucdavis.edu/
for details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182 AAACTCAAAGCCAAAGAGCTCGCCCAAGACAAACTCAAAGGTAAAAGCTAGACCGGCCA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 GGAGAACTATGCGAGAAACCTAGCAAGA-ATGGTCGGGTAACTGTGGCAACACCGGACAC 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               43; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         TAG_TISSUE=germinating seeds
TAG_LIB=QG_EFGHJ_lettuce_serriola
TAG_SEQ=TCTGTGCGGG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          410 TGATGCCAAGAAAGTGGTTCCAAACGTTGAACATCC 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           242 TGAGGACAAGAAGTAGTACCAAATGTGGACCATCC 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39.7%; Score 177.2; DB 5
82.6%; Pred. No. 4.6e-37;
live 0; Mismatches 43
                                                                                                                                                                                     organism="Lactuca sativa"
                                                                                                                                            Plate: QGF9 row: P column: 04.
Location/Qualifiers
1..547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AJ412176.1 GI:15005431
 Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 82.6 tes 228; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AJ412176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           294
                                                                                                                                                                           Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 6
AJ412176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                          FEATURES
            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
```

셤 à g ð 셤 ઠ 요 8

```
606 bp mRNA linear EST 11-JUL-2003
DHOABS1ZE07RM1 HaDevR1 Helianthus annuus CDNA clone HaDevR151E07,
CD946862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154 ATGTGGCAACACACAGAGATGACCAGTGCAAGTCTTGGGAGGGGGCACCCATGG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Helianthus annus torm. Caracter, Embryophyta; Embryophyta; Tracheophyta; Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; eudicotyledons; core eudicots; asterids; campanulids; Asteraceae; Asteroideae; Heliantheae; Helianthus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      214 AGCTTGTCATGTGCGCGGTGGGAAACACATGTGCTTCTGCTACTTCAACTGTTCCAAAGC 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCTAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         274 ccagaagtrogcricagaraaacrcagagcagaagcrcgccaaggagaagrrgaagc 333
Tamborindeguy, C., Ben, C., Liboz, T. and Gentzbittel, L. Sequence evaluation of four specific cDNA libraries for Sequence evaluation of four specific cDNA libraries for Gevelopmental genomics of sunflower
MOL. Genet. Genomics 271 (3), 367-375 (2004)
Contact: Gentzbittel L. Laboratoire de Biotechnologie et Amelioration des Plantes
Listitut National Polytechnique de Toulouse - Ecole National
Superieure Agronomique de Toulouse
IRR40, Pole de Biotechnologie Vegetale, 18 chemin de Borde Rouge,
Auzeville, CASTANET TOUGSAN 31326, France.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93, rue Henri Rochefort 91025 EVRY CEDEX France
Tel: 33 1 69 47 54 00
Fax: 33 1 69 47 54 10
This sequence has been generated in the framework of the french plant genomics programme 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infoblogen.fr).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genoplante, a major partnership french program in plant genomics Unpublished (2003)
Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Emil protoplast"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cell_type="protoplast"
/clone_lib="Helianthus annuus cv.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 160.6; DB 1;
Pred. No. 1.4e-32;
0; Mismatches 54;
```

ö

Mon

```
Lactuca sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plate: QGA12
                                                                                                                                                                                             64
                                                                                                                                                                                                                              282
                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bource
                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
BQ844100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                       ઠ
                                                                                                                    g
                                                                                                                                                           δ
                                                                                                                                                                                         ద
                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AJ541276 ADpsR1 Helianthus annuus CDNA clone HO0003K05, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; sateride; campanulida; Asterales; Asteraceae; Asteroideae; Heliantheae; Helianthus.

[ (bases 1 to 475)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  276
                                                                                                                                                                                                                                                                 155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                        215 CTGTGGCAATACGCGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                        157 ATGTGGCAAGACAAACACTGTGATGACCAGTGCAAGTCTTGGGAGGGTGCAGCCCATGG 216
                                                                                                                                                                                                                                                                                                                                                                                                             275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   335 CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         277 CCAGAAGTIGGCTCAGGATAAACTCAGAGGGGAAGAGCTCGCCAAGGAGAAGATIGAACC 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tamborindeguy, C., Ben, C., Liboz, T. and Gentzbittel, L.
Sequence evaluation of four specific cDNA libraries for
developmental genomics of sunflower
MOI. Genet. Genomics 271 (3), 367-375 (2004)
Contact: Tamborindeguy C
Laboratoire de Biotechnologie et Amelioration des Plantes
Institut National Polycechnique de Toulouse - Ecole National
Superieure Agronomique de Toulouse - Ecole National
Superieure Agronomique de Toulouse
IFRAO, Pole de Biotechnologie Vegetale, 18 chemin de Borde Rouge,
Auzeville, CASTANET TOLOSAN 31326, France.
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                           Length 606;
                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /dev_stage="i- to_5-days old protoplast"
/clone_lib="HaDpsR1"
                                                                                                                                                                                                                              58;
                                                                                                                                                                                           34.6%; Score 154.2; DB 6; 76.5%; Pred. No. 8e-31;
                                 organism="Helianthus annuus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Helianthus annuus"
                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Helianthus annuus (common sunflower)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         db_xref="taxon:4232"
/clone="HO0003K05"
/tissue_type="hypocotyl"
/cell_type="protoplast"
                                                /mol_type="mRNA"
/cultivar="psc8"
/db_xref="taxon:4232"
/clone="HaDevR151E07"
/t.1sue type="leaves"
/clone_lib="HaDevR1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="mRNA"
/cultivar="Emil"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AJ541276.1 GI:28370751
                                                                                                                                                                                                                              Matches 189; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Helianthus annuus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        395 CCAAAAG 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           337 CGAAAAG 343
                                                                                                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence
                                                                                                                                                                                             Query Match
                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AJ541276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
```

```
/lab host="E.coli"
/clone_lib="Qc_ABCDI lettuce salinas"
/clone location successor of RNA from a single genotype.
Separate oDNAs were generated using primers that
incorporated unique 5' and 3' tags to distinguish each
source of RNA. cDNAs were then pooled, size-fractionated,
directionally cloned into a custom medium-copy vector and
transformations made with four size classes to minimize
size bias. Details of each source of RNA and library
construction can be obtained at http://cgpdb.ucdavis.edu/
TAG_SEQ=Not found"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BQ844100 239 bp mRNA linear EST 14-AUG-2002
QGA12M13.yg.abl QG_ABCDI lettuce salinas Lactuca sativa CDNA clone
QGA12M13, mRNA sequence.
                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lactuca sativa
Makaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; campanulids; Asterales; Asteraceae; Cichorioideae;
                                                                                                                                                                162 GCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGC 221
                                                                                                                                                                                                                                                                                                      222 AATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGT 281
                                                                                                                                                                                                                                                                                                                                                      CATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGCCGAAAAG 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124 CATGTGCGCGGTGGGAAACACTTGTGCTTCTGCTACTTCAACTGTTCCAAAGCCCAGAAG 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             342 CTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAG 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184 TTGGCTCAGGATAAACTCAGAGCAGAAGAGCTCGCCAAGGAGAAGATTGAAGCCGAAAAG 243
                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Alexander Kozik (R.W.Michelmore)
Contact: Alexander Kozik (R.W.Michelmore Lab
Department of Vegetable Crops, R.W.Michelmore Lab
Department of California at Davis (UCD)
Asmundson Hall, UCD, Davis, CA 95616, USA
Tel: 1-(530)-742-1742
Fax: 1-(530)-752-9659
Fmail: akczik@atgc.org (michelmore@vegmail.ucdavis.edu)
Fmail: akczik@atgc.org (michelmore@vegmail.ucdavis.edu)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cichorieae, Lactuca.

(bases 1 to 239)

Kozik, A., Michelmore, R.W., Knapp, S., Matvienko, M., Rieseberg, L.,
Lin, H., van Bomen, M., Lavelle, D., Chevalier, P., Ziegle, J.,
Ellison, P., Kolkman, J., Slabaugh, M.S., Livingston, K., Zhou, Y.,
Lai, Z., Church, S., Jackson, L. and Bradford, K.
Lettuce and Sunflower ESTs from the Compositae Genome Project
                                                                                                                                                                                                         4 GGATCGGTGAAAGGAGAATTATGTGAGAAGGCAAGCAAGAAGATGGTCCGGAAAATGTGGC
                                                                                         Gaps
                                                                                         ö
                  Length 475;
                                                                                         54; Indels
                  Score 153.6; DB 1
Pred. No. 1.1e-30;
34.4%; Sco...
77.5%; Pred. No. 1.1...
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Lactuca sativa"
/mol_type="mRNA"
/cultivar="Salinas"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A12 row: M column: 13.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 http://compgenomics.ucdavis.edu/
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db xref="taxon:4236"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'clone="QGA12M13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BQ844100.1 GI:22224503
                                                       Best Local Similarity 77.5
Matches 186; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .239
```

g ò

ઠે 셤

셤 ઠે

δ g

```
Helianthus annuus (common sunflower)

Helianthus annuus

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnollophyta; eudicotyledons; core eudicots;

asterids; campanuldus; Asterales; Asteraceae; Asteroideae;

Heliantheae; Helianthus.

I (bases 1 to 420)

S Tamborindeguy, C., Env. C., Liboz, T. and Gentzbittel, L.

Sequence evaluation of four specific cDNA libraries for

Gevelopmental genomics of sunflower

Mol. Genet. Genomics 271 (3), 367-375 (2004)

Contact: Tamborindeguy C

Laboratoria ed Biotechnologie et Amelioration des Plantes

Institut National Polytechnique de Toulouse

Institut Agronomique de Toulouse

IRRAO, Pole de Biotechnologie Vegetale, 18 chemin de Borde Rouge,

Auzeville, CASTANET TOLOSAN 31326, France.
                                                                                                                                                                                                                                                     AJ541283
AJ541283 HaDpsRl Helianthus annuus CDNA clone H00003K21, mRNA
sequence.
                                               BQ847005
QGA20020.yg.abl QG_ABCDI lettuce salinas Lactuca sativa cDNA clone
QGA20020, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         265 CGGCCCATGGAGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATT 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           325 GTAAAAAGCCGAAAAGCTTGCTCAAGACAAAGTTAAAGGCGGAACAACTGGCTCAAGACA 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                  GTAAAAAAGCCGAAAAGCTTGCTCAAGACAAACTTAAAAGCCGAACAACTCGCTCAAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     205 GGTCGGGAAACTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4 GGTCCGGAAAATGTGGCAACACAAGACACTGTGAACGACCAGTGCAAGTCTTGGGAGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64 CAGCCCAIGGAGCTIGICACGIGCGGGGGGAAACACAIGTGCTTCTGCTACTTCTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 420;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="H00003K21"
(tissue_type="hypocotyl"
(cell_type="protoplast"
dev_stage="1- to 5-days old protoplast"
/clone_lib="HaDpsR1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match

28.5%; Score 127; DB 1;
Best Local Similarity 77.4%; Pred. No. 1.8e-23;
Matches 154; Conservative 0; Mismatches 45;

    .420
    /organism="Helianthus annuus"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mol_type="mRNA"
|cultivar="Emil"
|db_xref="taxon:4232"
                                                                                                        403
                                                                                                                                              202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               385 AACTTAATGCCCAAAAGCT 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184 AGATTGAAGCCGAAAAGGT 202
                                                                                                                                                                                                                                                                                                                      AJ541283
AJ541283.1 GI:28370758
                                                                                                   385 AACTTAATGCCCAAAAGCT
                                                                                                                                            184 AGATTGAAGCCGAAAAGGT
                  325
                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                         RESULT 11
AJ541283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BQ847005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                 g
                                                                                                 ò
                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                 ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AJ541406 ADD9R1 Helianthus annuus cDNA clone HO0005105, mRNA sequence.
                                                                                                                          155 AGATATCGCATCCGTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                          CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                         275 AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGT-AAAAAG 333
                                                                                                                                                                                                                                                                                                                             Helianthus annuus
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Epkaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; campanulids; Asterales; Asteraceae; Asteroideae;
Helianthese; Helianthus.

1 (bases 1 to 359)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64 CAGCCCATGGAGCTTGTCACGTGCGCAGTGGGAACACATGTGCTTCTGCTACATCTGAACT 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       265 CGGCCCATGGAGCGTGTCATGTGCGTAACGGGAAACACATGTTTTCTGTTACTTCAATT 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Laboratoire de Biotechnologie et Amelioration des Plantes Institut National Polytechnique de Toulouse - Ecole National Superieure Agronomique de Toulouse - Ecole National IFR40, Pole de Biotechnologie Vegetale, 18 chemin de Borde Rouge, Auzeville, CASTANET TOLOGAN 31326, France.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      205 GGTCGGGAAACTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGAAGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 GGTCCGGAAAATGTGGCAACACAAGACACTGTGACGACCAGTGCAAGTCTTGGGAGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tamborindeguy, C., Ben, C., Liboz, T. and Gentzbittel, L. Sequence evaluation of four specific cDNA libraries for developmental genomics of sunflower Mol. Genet. Genomics 271 (3), 367-375 (2004)
Contact: Tamborindeguy C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                 Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match

28.5%; Score 127; DB 1; Length 359;
Best Local Similarity 77.4%; Pred. No. 1.7e-23;
Matches 154; Conservative 0; Mismatches 45; Indels
                                                                                          Indele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:4232"
/clone="H0005105"
/tissue_type="hypocoty1"
/cell_type="proctoplast"
/dev_stage="1- to 5-days old protoplast"
/clone_lib="HabpsR1"
                                               Score 131.2; DB 5;
Pred. No. 1.2e-24;
0; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Helianthus annuus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Helianthus annuus (common sunflower)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                      CCGAAAAGCTTGCTCAAGA 352
                                                                                                                                                                                                                                                                                                                                                                                                                               CTGAAAAGCTTGCCCAAGA 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="mRNA"
/cultivar="Emil"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ541406.1 GI:28370881
                                      Query Match
29.4%;
Best Local Similarity 81.4%;
Matches 162; Conservative (
                                                                                                                                                                                                                215
                                                                                                                                                                                                                                                                                                                                                                                                                               221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 10
AJ541406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
ORIGIN
```

ORIGIN

ઠે g ઠે

```
RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /ione libe mode ABCDI lettuce salinas"
/clone libe mode ABCDI lettuce salinas"
/note="Vector: pBRcDNASfiAB; The library was constructed from 10 different sources of RNA from a single genotype. Separate cDNAs were generated using primers that incorporated unique 5, and 3' tags to distinguish each source of RNA. cDNAs were then pooled, size-fractionated, directionally cloned into a custom medium-copy vector and transformations made with four size classes to minimize size bias. Details of each source of RNA and library construction can be obtained at http://cgpdb.ucdavis.edu/TAG_IIB=GABCDI lettuce salinas
TAG_LIB=GABCDI lettuce salinas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lactuca sativa
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; campanulids; Asterales; Asteraceae; Cichorioideae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTAGTGGAGAACTATGCGAGAAAGCTAGCAAGACATGGTCGGGAAACTGTGGCAATACG 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 GTGATAGGAGAACTATGTGAGAAACCTACTGGGACTGGACCGCTAACATGTGTGAACACC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     228 GGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGGAGCGTGTCATGTG 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               288 CGTAACGGGAA-ACACATGTGTTTTCTG-TTACTTCAATTGTAAAAAGCCGAAAAGCTTG 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 CGTGGAGGGAAGACACGTGAGCTTCTGCGTACTTTATTTGTCCTAAAGCTGAAAAGCTTG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          346 CTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGCCCAAAAGCTTG 405
                                                                                                                                                                                                                                                                                                                                                                                             Contact: Alexander Kozik [R.W.Michelmore]
Department of Vegetable Crops, R.W.Michelmore Lab
University of California at Davis (UCD)
Asmundson Hall, UCD, Davis, CA 95616, USA
Tel: 1-(530)-742-1742
Email: akoaik@atgc.org [michelmore@vegmail.ucdavis.edu]
Email: akoaik@atgc.org [michelmore@vegmail.ucdavis.edu]
                                                                                                                                                                                  Cichorieae; Lactuca.

(Cichorieae; Lactuca.

(Coalk, M., Michelmore, R.W., Knapp, S., Matvienko, M., Rieseberg, L., Lin, H., van Damme, M., Lavelle, D., Chevalier, P., Ziegle, J., Ellison, P., Kolkman, J., Slabaugh, M.S., Livingston, K., Zhou, Y., Liai, Z., Church, S., Jackson, L. and Bradford, K.

Lettuce and Sunfilower ESTs from the Compositae Genome Project http://compgenomics.ucdavis.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 603;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 406 ACCG----TGATGCCAAGAAGTGGTTCCAAACGTTGAACATCC 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361 ACCGGCCATGAGACAAGAAGTAGTACCAAATGTGGACCATCC 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 123.6; DB 5;
Pred. No. 1.6e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .603
/organism="Lactuca sativa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plate: QGA20 row: O column: 20.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:4236"
/clone="QGA20020"
/lab_host="E.coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="mRNA"
/cultivar="Salinas"
    BQ847005
BQ847005.1 GI:22230770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27.7%;
71.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204; Conservative
                                                                        Lactuca sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 204; Conserv
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
AJ412470 Helianthus annuus cv. Emil protoplast Helianthus annuus cDNA clone HabplR107C12, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
                   AU306450 AU306450 AU7 bp mRNA linear EST 22-JAN-2004
AU306450 zinnia cultured mesophyll cell equalized CDNA Zinnia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue type="mesophyll cell"
/clone lib=zinnia cultured mesophyll cell equalized cDNA"
/note="Voctor: pGEM-T easy; cultured in tracheary element
differentiation-inductive medium"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              315
                                                                                                                                                                                  Zinnia elegans
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; campaniids; Asterales; Asteraceae; Asteroideae;
                                                                                                                                                                                                                                                                                                                                                                                                                        Visualization by comprehensive microarray analysis of gene expression programs during transdifferentiation of mesophyll cells into xylem cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          316 ACTICAATIGIAAAAAGCCGAAAAGCTT-GCTCAAGACAAACTTAAAGCCGAACAACTC 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAAGACATGGTCGGGAAACTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAAGACATGGTCCGGAAATTGTGGCAACACACAAGACACTGCGATGACCAGTGCAAGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGAGGGTGCGCCCATGGAGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGAGGGTGCAGCTCATGGTGCTTGTCACGTGCGCGGTGGGAAACACATGTGCTTCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                  Heliantheae, Zinnia.

Laurass 1 to 447)

Demura, T., Tashiro, G., Horiguchi, G., Kishimoto, N., Kubo, M., Matsuoka, N., Minami, A., Nagata-Hiwatashi, M., Nakamura, K., Okamura, Y., Sassa, N., Suzuki, S., Yazaki, J., Kikuchi, S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Proc. Natl. Acad. Sci. U.S.A. 99 (24), 15794-15799 (2002)
Contact: Taku Demura
Morphogeneeis Research Group
MIKRN Plant Science Center
1-7-22 Suchircotho, Yokohama, Kanagawa 230-0045, Japan
Tel: 81-45-503-9605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 122; DB 1; Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. 4e-22;
0; Mismatches 45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: demura@postman.riken.go.jp
This clone was obtained at our laboratory
Seg primer: M13 forward.
                                                                     elegans cDNA clone Z16034, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Zinnia elegans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           375 GCTCAAGACAAACTTAATGCCCAAAA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="mRNA"
/cultivar="Canary bird"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAAAGGAGAAGATTGATGCTGGAAA 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:34245"
/clone="216034"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                 AU306450.1 GI:41122386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 77.7
Matches 160; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .447
                                                                                                                                                                   Zinnia elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 14
AJ412470
LOCUS
DEFINITION
                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                      LOCUS
DEFINITION
                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
AU306450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
```

```
/lab_hore_will lettuce salinas"
/lab_hore_will lettuce salinas"
/clone_lib="GG_ABCDI"
/note="Vector: pBRcDNASfiaB; The library was constructed
from 10 different sources of RNA from a single genotype.
Separate cDNAs were generated using primers that
incorporated unique 5' and 3' tags to distinguish each
source of RNA. cDNAs were then pooled, size-fractionated,
directionally cloned into a custom medium-copy vector and
transformations made with four size classes to minimize
size bias. Details of each source of RNA and library
construction can be obtained at http://cgpdb.ucdavis.edu/
TAG_INSUE=chemical induction
TAG_LIB=GG_ABCDI lettuce salinas
TAG_ESC=TGTAGCCGGG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              259 AGGGTGCGCCCATGGAGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTTCTGTTACT 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       319 TCAATTGTAAAAAGCCGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTC 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rcaacrerrcaaaagcagagaagarggercaagaraagcrgaaagccgaaagagcrcacca 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 Addenderadecentedadecenderaderadadeadanacadaradecenterader 60
                                                                                                                                         Contact: Alexander Kozik [R.W.Michelmore]
Department of Vegetable Crops, R.W.Michelmore Lab
University of California at Davis (UCD)
Asmundson Hall, UCD, Davis, CA 95616, USA
Far: 1-(530)-752-1742
Fax: 1-(530)-752-9659
Email: akozik@atgc.org [michelmore@vegmail.ucdavis.edu]
For details
           Ellison, P., Kolkman, J., Slabaugh, M.S., Livingston, K., Zhou, Y., Lai, Z., Church, S., Jackson, L. and Bradford, K.
Lettuce and Sunflower ESTs from the Compositas Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          379 AAGACAAACTTAATGCCCAAAAAGCTTGACCGTGATGCCAAGAAAGTGGTTCCAA 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 AAGACGAGATIGAAGCCGAGAAACCACCACATGTTGAGCATCCAGTTGGACCCA 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 340;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 94; DB 5; I
Pred. No. 1.5e-14;
0; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .340
/organism="Lactuca sativa"
                                                                                                                                                                                                                                                                                                                                                                                      Al6 row: N column: 20. Location/Qualifiers
                                                                                        http://compgenomics.ucdavis.edu/
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          db xref="taxon:4236"
/clone="QGA16N20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           completed: March 18, 2005, 16:29:36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="mRNA"
/cultivar="Salinas"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21.1%;
71.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 71.3
Matches 124; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search completed: Mar
Job time : 7108 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                             Source
                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                       Helianthus annuus (common sunflower)
Helianthus annuus
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
saterids; campanulids; Asterales; Asteraceae; Asteroideae;
Heliantheae; Helianthus.

E 1 (bases 1 to 48.7)
S Squence evaluation of four specific cDNA libraries for
developmental genomics of sunflower

L Mol. Genet. Genomics 27 (3), 367-375 (2004)
Conteact: Gentzbittel L
Laboratoire de Biotechnologie et Amelioration des Plantes
Institut National Polytechnologie de Toulouse - Ecole National
Superieure Agronomique de Toulouse
INR40, Pole de Biotechnologie Vegetale, 18 chemin de Borde Rouge,
Auzeville, CASTANET TOLOGAN 31326, France.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGALGN20.yg.abl QG_ABCDI lettuce salinas Lactuca sativa cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                155 AGATATCGCATCCGTTAGTGGAACTATGCGAGAAGCTAGCAAGACATGGTCGGGAAA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  215 CTGTGGCAATACGGGACATTGTGACAACCAATGTAAATCATGGGAGGGTGCGGCCCATGG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170 AGGGGCAACACAAGACATIGTGTGGACCAGGCAAGTTTAGGGAGGGTGCAGCCTTGG 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                230 AGTTGTTCATGTGCGCGGGGAAACACTTTTGTTTTAGTAATTACAATATTACCAAAGC 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAAAAGCTTGCTCAAGACAAACTTAAAGCCGAACAACTCGCTCAAGACAAACTTAATGC 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lactuda sativa
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; campanulids; Asterales; Asteraceae; Cichorioeae;
Cichorieae; Lactuca.
1 (bases 1 to 340)
Kozik, A., Michelmore, R.W., Knapp, S., Matvienko, M., Rieseberg, L.,
Lin, H., van Damme, M., Lavelle, D., Chevaller, P., Ziegle, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCGTGTCATGTGCGTAACGGGAAACACATGTGTTTCTGTTACTTCAATTGTAAAAAGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         290 CCAGAAG--TAGGTCAGGTAAATACAGAGCAGAAGAGTACGCCAAGGAGAAGTTAGAAGC 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cell_type="protoplast"
/clone_lib="Helianthus annuus cv. Emil protoplast"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1; Length 487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
22.5%; Score 100.2; DB 1
Best Local Similarity 65.6%; Pred. No. 3.3e-16;
Matches 162; Conservative 0; Mismatches 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Helianthus annuus"
/mol_type="mRNA"
/cultivar="Emil"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:4232"
/clone="HaDplR107C12"
AJ412470
AJ412470.1 GI:15005725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BQ845488
BQ845488.1 GI:22227399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lactuca sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAAAAG 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAAAAG 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       335
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BQ845488
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

0; Gaps